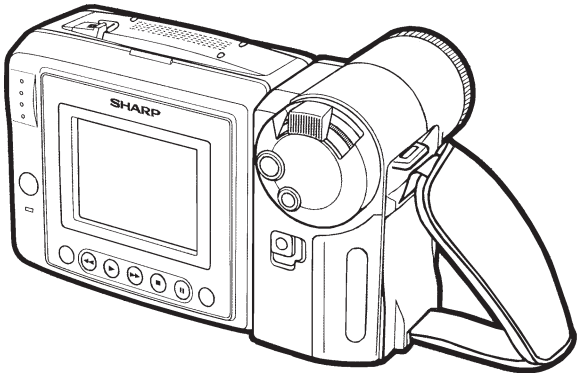
# SHARP SERVICE MANUAL

S21O7VL-AH150

SERVICE MANUAL
LIQUID CRYSTAL CAMCORDER Hi 8 NTSC
MODELS VL-AH150U/AH160U

## LIQUID CRYSTAL CAMCORDER Hi 8 NTSC




## MODELS VL-AH150U VL-AH160U

In the interests of user-safety (Required by safety regulations in some countries) the set should be restored to its original condition and only parts identical to those specified be used.

## CONTENTS

Page
1. IMPORTANT SERVICE NOTES ..... 2
2. SPECIFICATIONS ..... 5
3. PART NAMES AND FUNCTION ..... 6
4. DISASSEMBLY OF THE SET ..... 7
5. MECHANISM ADJUSTMENT ..... 13
6. ADJUSTMENT OF VCR AND CAMERA ..... 24
7. SYSTEM BLOCK DIAGRAMS ..... 37
8. SCHEMATIC DIAGRAMS ..... 44
9.PRINTED WIRING BOARD ASSEMBLIES ..... 84
10.REPLACEMENT PARTS LIST ..... 95
11.PACKING OF THE SET ..... 111

SHARP CORPORATION

This document has been published to be used for after sales service only.
The contents are subject to change without notice.

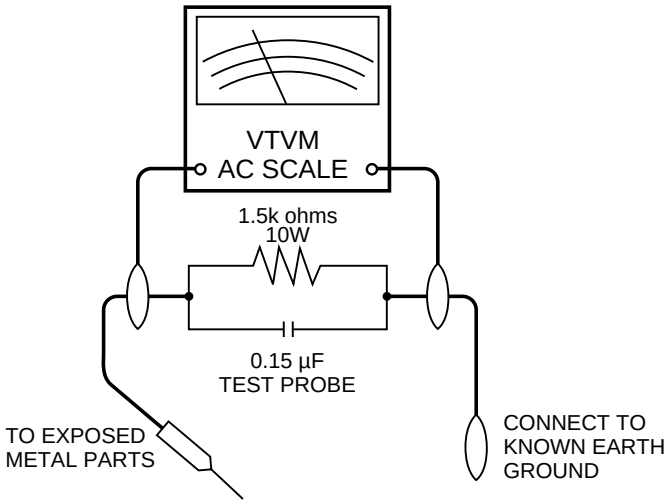
# 1. IMPORTANT SERVICE NOTES

BEFORE RETURNING THE VIDEO CAMERA RECORDER

Before returning the video camera recorder to the user, perform the following safety checks.

1. Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the video camera recorder.
2. Inspect all protective devices such as non-metallic control knobs, insulating materials, cabinet backs, adjustment and compartment covers or shields, isolation resistor/capacitor networks, mechanical insulators etc.
3. To be sure that no shock hazard exists, check for leakage current in the following manner.

· Plug the AC line cord directly into a 120 volt AC outlet (Do not use an isolation transformer for this test).
· Using two clip leads, connect a l.5k ohm, 10 watt resistor paralleled by a 0.15µF capacitor in series with all exposed metal cabinet parts and a known ground, such as a water pipe or conduit.
· Use a VTVM or VOM with 1000 ohm per volt, or higher sensitivity or measure the AC voltage drop across the resistor (See Diagram).
· Move the resistor connection to all exposed metal parts having a return path to the chassis (antenna connections, metal cabinet, screw heads, knobs and control shafts, etc.) and measure the AC voltage drop across the resistor. Reverse the AC plug (a non polarized adaptor plug must be used but only for the purpose of completing these checks) on the set and repeat the AC voltage measurements for each exposed metallic part. Any reading of 0.45V rms (this corresponds to 0.3mA rms AC.) or more is excessive and indicates a potential shock hazard which must be corrected before returning the video camera recorder to the user.



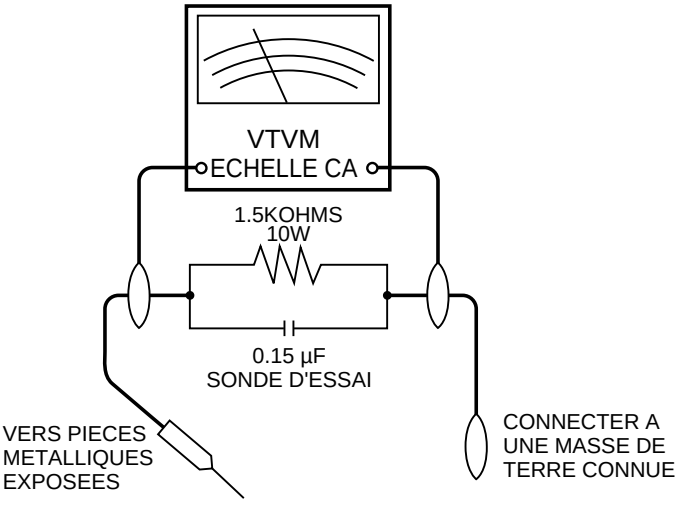

# 1. NOTES DE SERVICE IMPORTANTES

AVANT DE RENDRE LE MAGNETOSCOPE

Avant de rendre le magnétoscope à l'utilisateur, effectuer les vérifications de sécurité suivantes.

1. Vérifier toutes les gaines de fil pour être sûr que les fils ne sont pas pincés ou que le matériel n'est pas coincé entre le châssis et les autres pièces métalliques dans le magnétoscope.
2. Vérifier tous les dispositifs de protection tels que les boutons de commande non métalliques, les matériaux d'isolement, le dos du coffret, les couvercles de compartiment et ajustement ou les boucliers, les réseaux de résistance / condensateur d'isolement, les isolateurs mécaniques, etc.
3. Pour être sûr qu'il n'y a aucun risque de choc électrique, vérifier le courant de fuite de la maniére suivante.

· Brancher le cordon d'alimentation secteur directement dans une prise de courant de 120 volts. (Ne pas utiliser de transformateur d'isolement pour cet essai).
· Utiliser deux fils à pinces et connecter une résistance de 10 watts 1,5 kohm en parallèle avec un condensateur de 0,15 µF en série avec des pièces du coffret métallique exposées et une masse de terre connue telle qu'un tuyau ou un conduit d'eau.
· Utiliser un VTVM ou VOM avec une sensibilité de 1000 ohms par volt ou plus ou mesurer la chute de tension CA entre la résistance (voir diagramme).
· Déposer la connexion de la résistance à toutes les pièces métalliques exposées ayant un parcours de retour au châssis (connexions d'antenne, coffret métallique, têtes de vis, boutons et arbres de commande, etc.) et mesurer la chute de tension CA entre la résistance. Inverser la fiche CA (une fiche intermédiaire non polarisée doit être utilisée à seule fin de faire ces vérifications.) sur l'appareil et répéter les mesures de tension CA pour chaque piéce métallique exposée. Toute lecture de 0,45 V rms (ceci correspond à 0,3 mA rms CA) ou plus est excessive et signale un danger de choc qui doit être corrigé avant de rendre le magnétoscope à son utilisateur.



# 2. SPECIFICATIONS

| | |
|---|---|
| Signal System: | NTSC standard |
| Recording System: | 2 rotary heads, helical scanning system |
| Cassette: | 8 mm video tape, MP type or Hi8 MP, ME type |
| Recording/Playback Time: | 120 minutes (P6-120) |
| Tape Speed: | 14.345 mm/second |
| Pickup Device: | 1/4" (6.4mm, effective size: 4.5 mm) CCD image sensor (with approx. 270,000 pixels including optical black) |
| Lens: | 16 × power zoom lens (F1.4, f=4.0-64.0 mm), and full-range auto focus |
| Lens Filter Diameter: | 46 mm |
| Monitor: | VL-AH150U : 3" (7.5 cm)<br>VL-AH160U : 3.5" (8.8 cm)full-color LCD screen (TFT active matrix) |
| Microphone: | Electret monaural microphone |
| Color Temperature Compensation: | Auto white balance with white balance lock |
| Minimum Illumination: | 0.8 lux (5 lux measured by EIA standard )(with gain-up, F1.4) |
| Video Output Level: | 1.0 Vp-p 75-ohm unbalanced |
| Audio Output Level: | –8 dBs, impedance less than 2.2 kohms |
| Speaker Output: | 200 mW |
| Power Requirement: | DC 3.6V (with battery pack)<br>DC 7.0V (with AC adapter) |
| Power Consumption: | VL-AH150U : 5.1W<br>VL-AH160U : 5.2W (during camera recording in full auto mode with zoom motor off and backlight in normal mode) |
| Operating Temperature: | 0°C to + 40°C(32°F to 104°F) |
| Operating Humidity: | 30% to 80% |
| Storage Temperature: | –20°C to +60°C(–4°F to 140°F) |
| Dimensions (approx.): | $7\ ^{7}/_{32}$" (W) × $4\ ^{9}/_{32}$" (H) × $3\ ^{7}/_{8}$" (D)<br>[183 mm (W) × 109 mm (H) × 99 mm (D)] |
| Weight (approx.): | VL-AH150U : 1.57 lbs (710g)<br>VL-AH160U : 1.58 lbs (715g)<br>(without battery pack, lithium battery, video cassette, and lens cap) |

### AC Adapter/Battery Charger UADP-0312TAZZ

| | |
|---|---|
| Power Requirement: | AC 110-240 V, 50/60 Hz |
| DC Output: | 7.0 V |
| Power Consumption: | 15 W |
| Dimensions (approx.): | $2^{11}/_{16}$"(W) × $1^{15}/_{32}$"(H) × $5^{13}/_{32}$"(D)<br>[68 mm (W) × 37 mm (H) × 137 mm (D)] |
| Weight (approx.): | 0.68lbs (308 g) |

### Battery Pack BT-H22

| | |
|---|---|
| DC Output: | 3.6V |
| Dimensions (approx.): | $2\ ^{1}/_{8}$" (W) × $^{3}/_{4}$" (H) × $2\ ^{7}/_{32}$" (D)<br>[54 mm (W) × 19 mm (H) × 56 mm (D)] |
| Weight (approx.): | 0.30 lbs (136 g) |

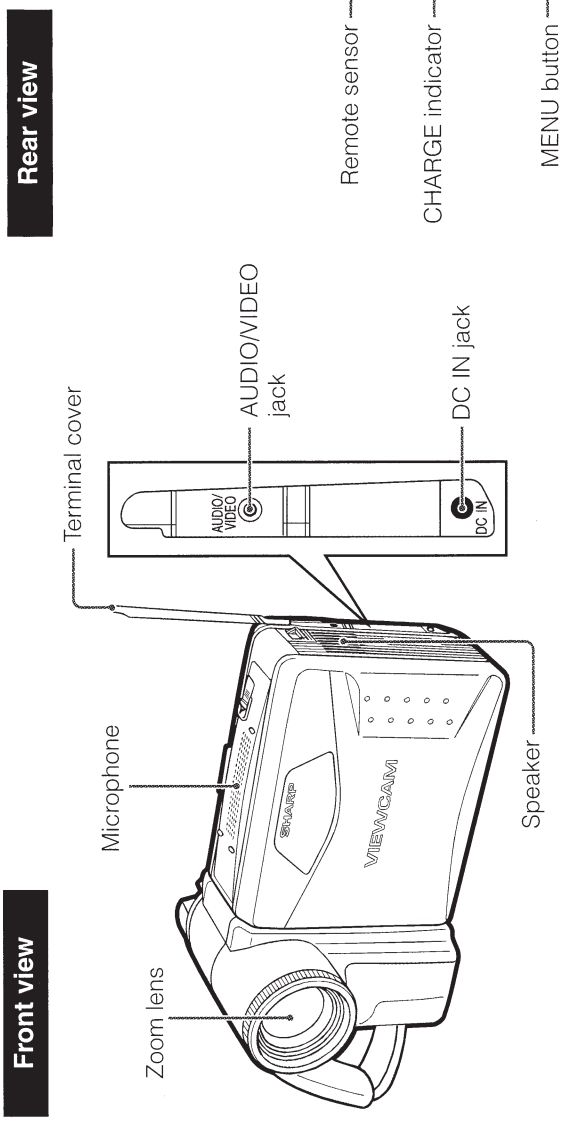
Specifications are subject to change without notice.

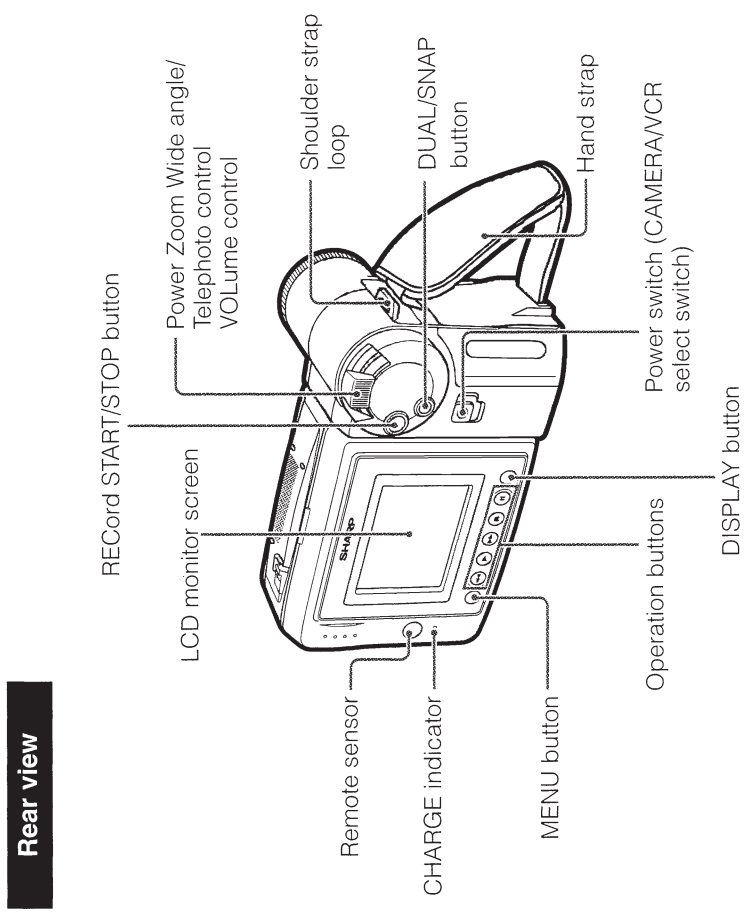
## SERVICE INFORMATION (For the U.S.)

For the location of the nearest Sharp Authorized Service, or to obtain product literature, accessories, supplies or customer assistance, please call 1-800-BE SHARP (1-800-237-4277) or visit SHARP's website (http://www.sharp-usa.com)

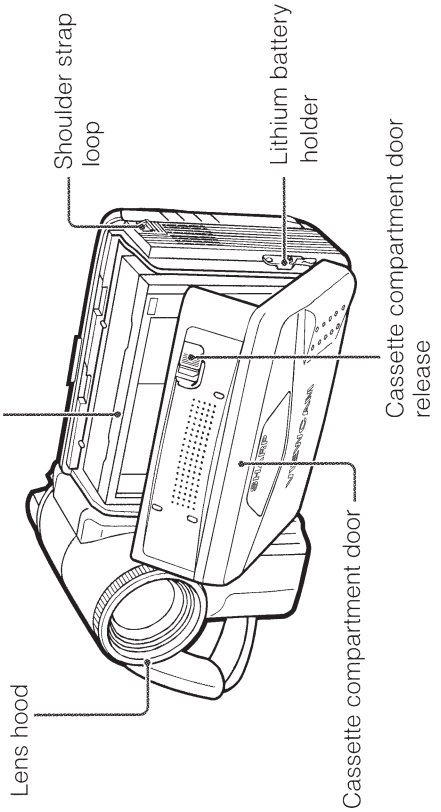
# 3. PART NAMES AND FUNCTION

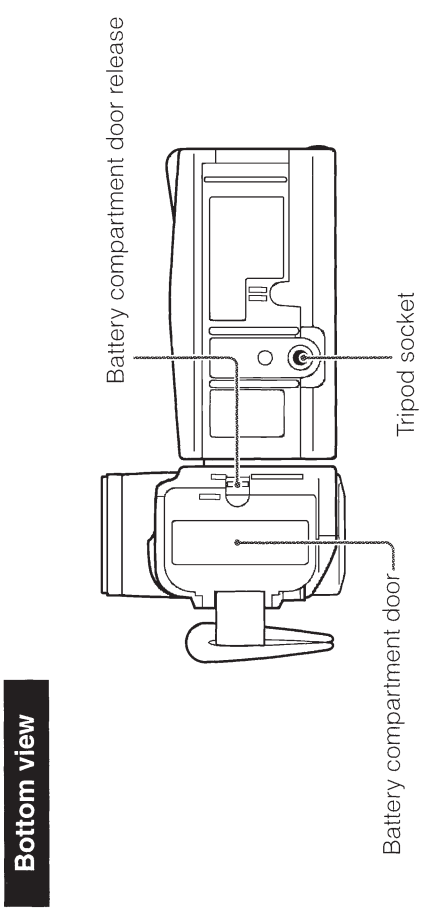
For details on the use of each control.




**When the cassette compartment door is open**



**WARNING : TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO WET LOCATIONS.**

**CAUTION**
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK. DO NOT REMOVE COVER. NO USER·SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

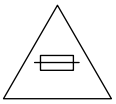
This symbol warns the user of uninsulated voltage within the unit that can cause dangerous electric shocks.

This symbol alerts the user that there are important operating and maintenance instructions in the literature accompanying this unit.

## *CAUTION*

This symbol mark means following.
For continued protection against fire hazard, replace only with same type fuse.
(CP901; 2.5A 64V, CP902; 2.5A 64V, CP903; 2.5A 64V)

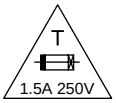
Camcorder only



## *CAUTION*

This symbol mark means following.
"RISK OF FIRE–
REPLACE FUSE AS MARKED."
(F101; 2A 250V)

AC Adapter only




**ATTENTION: POUR REDUIRE LES RESQUES D'INCENDIE OU DE CHOC ELECTRIQUE, NE PAS EXPOSER CET APPAREIL A LA PLUIE OU A L'HUMIDITE.**

**ATTENTION**
RISQUE DE CHOC ELECTRIQUE
NE PAS OUVRIR

ATTENTION: AFIN DE REDUIRE LES RISQUES DE CHOC ELECTRIQUE, NE PAS RETIRER LE COUVERCLE, AUCUN ORGANE INTERNE NE PEUT ETRE REPARE PAR L'UTIUSATEUR, CONFIER L'APPAREIL A UN DEPANNEUR QUALIFIE.

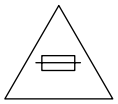
Ce symbole signale à l'utilisateur la présence d'une tension non isolée à l'intérieur de l'appareil qui peut être la cause de secousses électriques dangereuses.

Ce symbole avertit l'utilisateur que des instructions importantes relatives à l'utilisation et àl'entretien se trouvent dans le manuel accompagnant l'appareil.

## *ATTENTION*

Ce symbole signifie que l'on devra utiliser un fusible de même type (CP901; 2,5A 64V, CP902; 2,5A 64V, CP903; 2,5A 64V) pour assurer la sécurité.

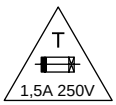
Camcorder seulement



## *ATTENTION*

La signification de ce symbole est la suivante.
"RISQUE D' INCENDIE – REMPLACEZ LE FUSIBLE SELON L' INDICATION."
(F101; 2A 250V)

Adaptateur CA seulement



# ⚠ CAUTION
## BEFORE BATTERY DESTROY

### ☐ NICKEL-CADMIUM BATTERY

**The following program is available in the United States. Please consult local environmental authorities concerning the availability of this or other programs in your area.**

The RBRC™ Seal

SHARP participates in the RBRC™* Nickel-Cadmium Battery Recycling Program in the United States. The RBRC™ Seal on our battery pack contained in our product indicates that SHARP is voluntarily participating in an industry program to collect and recycle these batteries. The RBRC™ program provides you with a convenient alternative to placing spent Nickel-Cadmium battery packs into the trash or municipal waste stream, which is illegal in some areas. At the end of their useful life, the Nickel-Cadmium battery can be dropped off at the nearest collection center for recycling. For information on the nearest collection center, call 1-800-8-BATTERY or your local recycling center. If you are located outside the United States, contact your local authorities for information concerning proper disposal and/or recycling of this battery. SHARP's involvement in this program is part of our commitment to protecting our environment and conserving natural resources.

[Footnote] *RBRC™ is trademark of the Rechargeable Battery Recycling Corporation.

### ☐ NICKEL-METAL HYDRIDE BATTERY
### ☐ LITHIUM or LITHIUM-ION BATTERY
### ☐ SEALED LEAD BATTERY

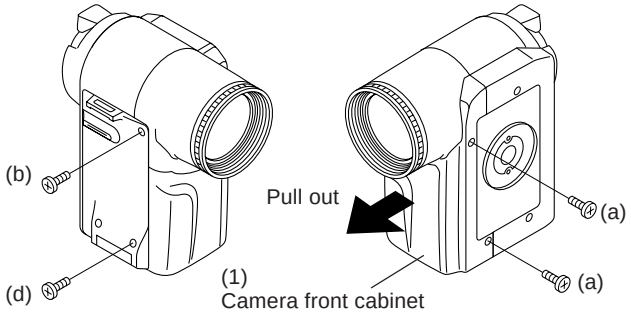
Battery disposal
Contains the above (Rechargeable) Battery. must be recycled or disposed of properly.
Remove the Battery from the products and contact Federal or State Environmental Agencies for information on recycling and disposal options.

# 4. DISASSEMBLY OF THE SET

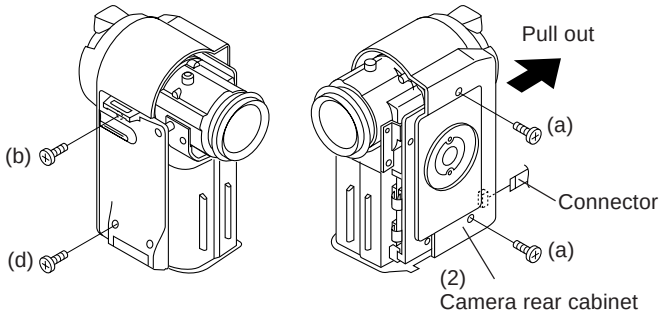
## 4-1. REMOVAL OF THE CAMERA SECTION

**Note:**

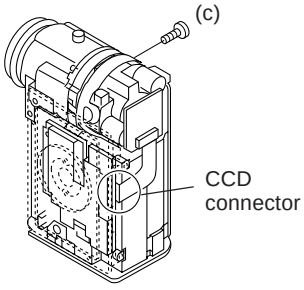
Before removing the cabinet, turn off the power supply, and ascertain that the battery has been removed.



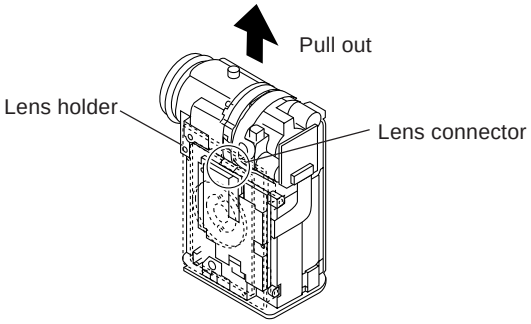

1. Remove one screw ((d)XiPSF20P04000), one screw ((b)LX-HZ0018TAFF), two screws ((a)LX-HZ0018TAFN), and pull out the camera front cabinet (1).



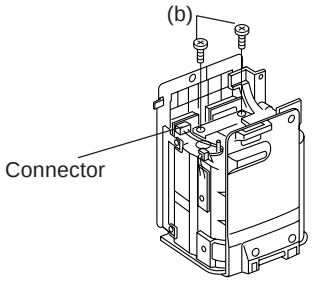

2. Remove one screw ((b)LX-HZ0018TAFF), one screw ((d)XiPSF20P04000) and two screws ((a)LX-HZ0018TAFN) and pull out the camera rear cabinet (2) backwards.
Remove the FPC in the camera rear cabinet.



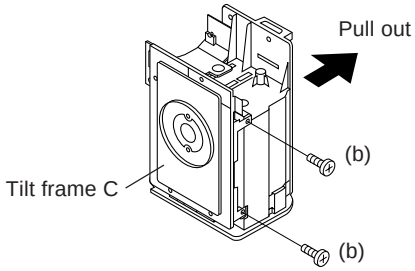

3. Firstly, remove the CCD connector from the Camera PWB, then remove one screw ((c)LX-HZ0045TAFN), the reverse side in this figure (Not remove the lens holder in this section).



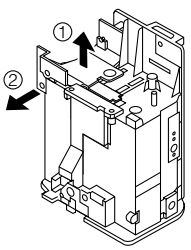

4. Pulling the lens holder, and pull out the lens upwards. Then, remove the lens connector.



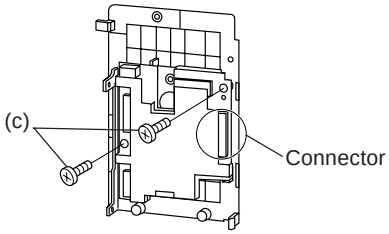

5. Remove the connector of the 6-cell detection switch, and remove two screws ((b)LX-HZ0018TAFF) fixing the battery catcher.



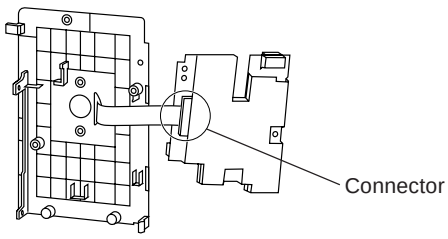

6. Remove two screws ((b)LX-HZ0018TAFF) and pull out the camera side cover from the tilt frame C.




7. Remove the battery catcher from the camera side cover.



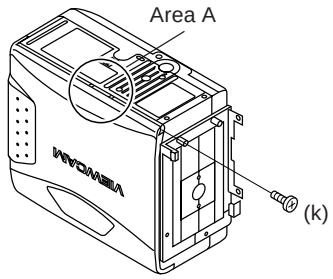

8. Remove one connector of the camera PWB, and remove two screws ((c)LX-HZ0045TAFN) fixing the PWB.



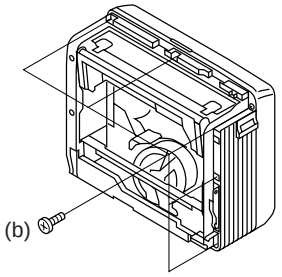

9. After removing the camera PWB from the tilt frame, remove the connector on the rear of the PWB.

## 4-2. DISASSEMBLY OF THE VCR MAIN BODY

<1. Removal of the VCR lid shaft>

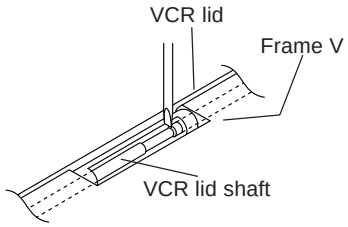



(1) Remove one screw ((k)LX-HZ0063TAFC).

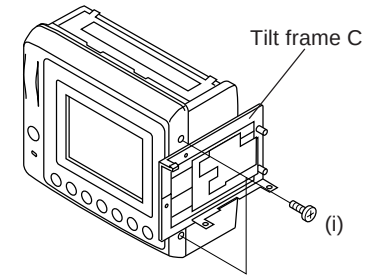



(2) Remove five screws ((b)LX-HZ0018TAFF).

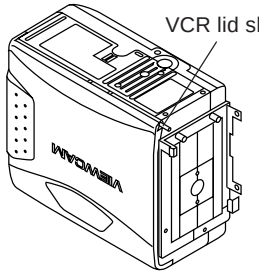
<Detail of area A>



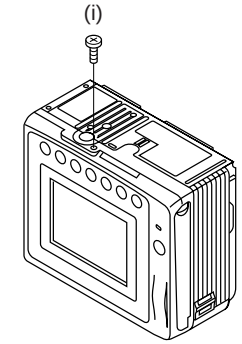

(2) Bring the jig (example: slotted precision screwdriver) into contact with the removal groove of the VCR lid shaft, and slide the screwdriver with care to prevent injuring the VCR lid and frame V.




(3) Turn the tilt frame C so that the screwdriver can be easily inserted, and remove two screws ((i)XiPSN20P04000).

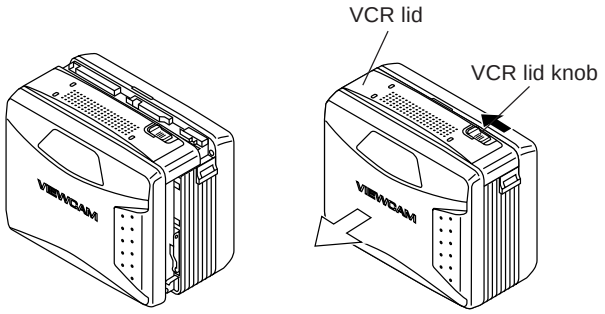



(3) Pull out the VCR lid shaft head which projects beyond the surface of the VCR lid.

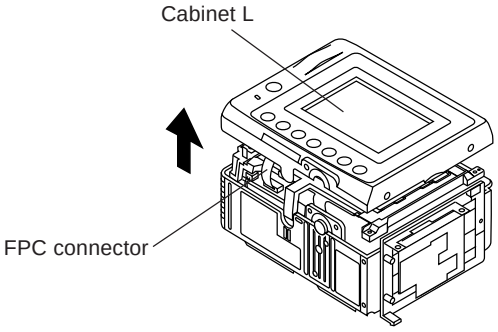



(4) Remove one screw ((i)XiPSN20P04000).

<2. Disassembly of the cabinet L>

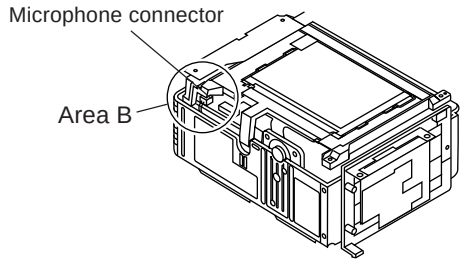



(1) Slide the “VCR lid knob” in the arrow direction, and slide the VCR lid in the arrow direction as far as the cabinet L fastening screw is visible. (Left figure) Since the connector of the microphone is still connected, take care to prevent excessively sliding the VCR lid.



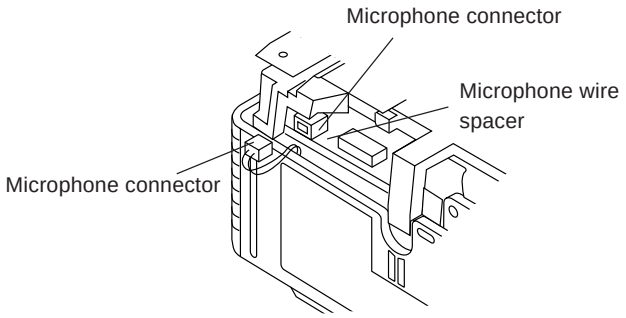

(5) Remove the cabinet L to the midway, and disconnect the FPC connector.

<3. Removal of the VCR lid>



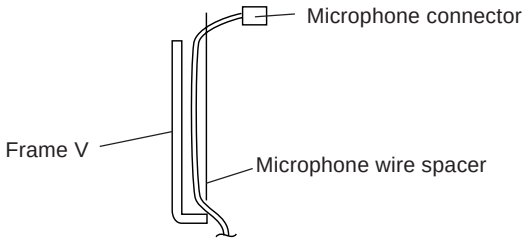

(1) Disconnect the microphone connector.

<Detail of area B>

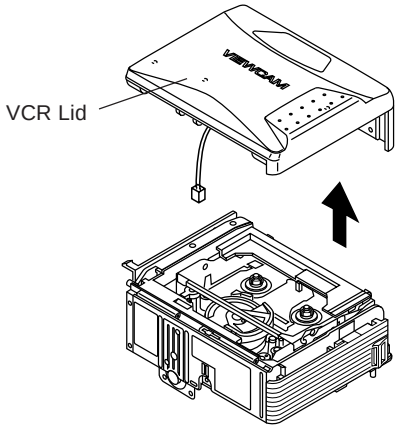



(2) Remove the connector cable from the hole of the microphone wire spacer.

<Detail of area B>

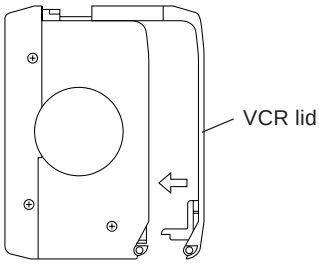



(3) Remove the microphone wire spacer from the Frame V.



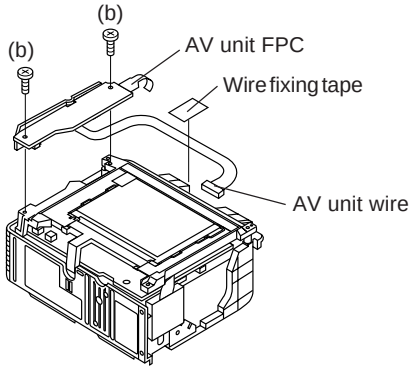

(4) Pull out the microphone wire cable with care to prevent it from interfering with the mechanical parts, and remove the VCR lid.

**Caution for installation of the VCR lid**



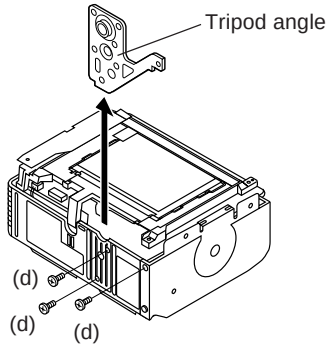

When installing the VCR lid, move the VCR lid in the arrow direction, keeping the VCR lid parallel to the main body as shown above.

<4. Removal of the AV unit and AV unit cover>

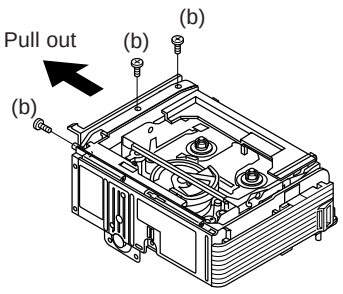



(1) Peel the wire fixing tape.
(2) Remove the AV unit wire.
(3) Remove the AV unit FPC.
(4) Remove two screws ((b)LX-HZ0018TAFF) fixing the AV unit and LCD holder.

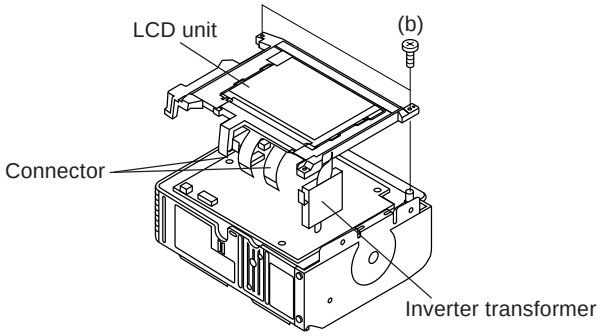
<5. Disassembly of the LCD holder>




(1) Remove three screws ((d)XiPSF20P04000) pull out the tripod angle.

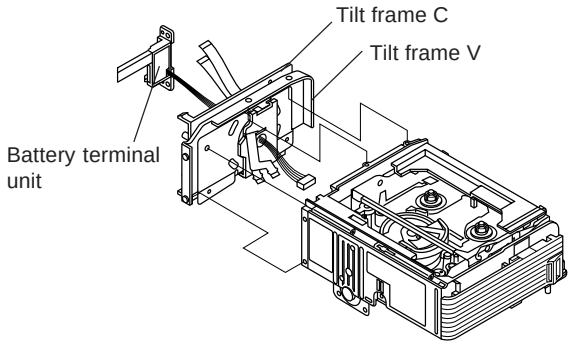



(2) Remove three screws ((b)LX-HZ0018TAFF) on the tilt frame V.
Move the tilt frame V by a looseness of the tilt FPC.



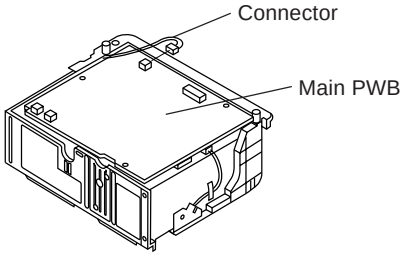

(3) Remove two screws ((b)LX-HZ0018TAFF) and two connectors, and remove the LCD unit (with inverter) from the main body.

<6. Removal of the tilt unit>

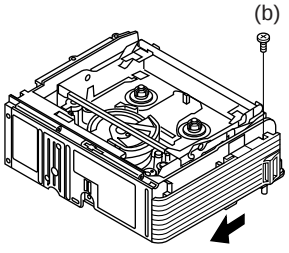



(1) Disconnect three connectors.
Remove the tilt unit from the cabinet of the main body.

<7. Removal of the speaker cover>

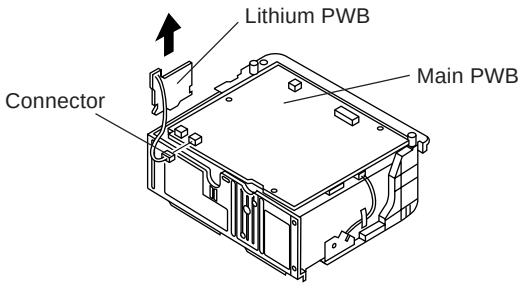



(1) Remove the connector of the speaker from the Main PWB.



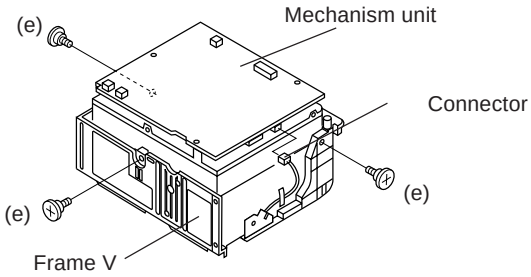

(2) Remove the screw ((b)LX-HZ0018TAFF) fixing the speaker cover.
(3) Move the speaker holder in the direction of the arrow to remove it.

<8. Removal of the Lithium PWB>



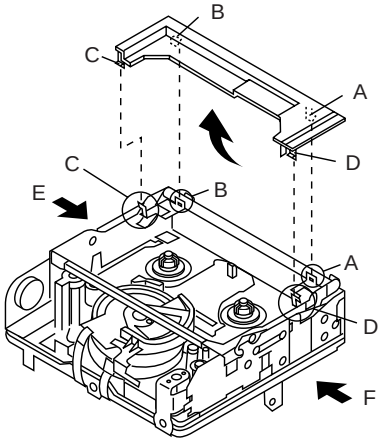

(1) Remove the connector of the Lithium PWB from the Main PWB.
(2) Move the lithium unit in the direction of the arrow.

<9. Disassembly of the frame V>



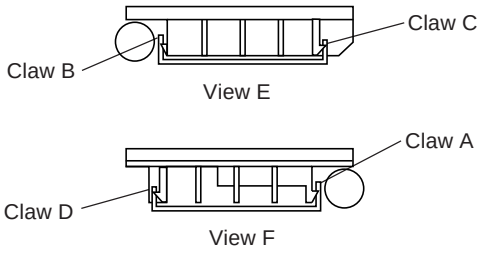

(1) Remove three screws ((e)LX-BZ0191TAFD) and one connector, and remove the frame V from the main body.

<10. Removal of the cassette compartment lid>



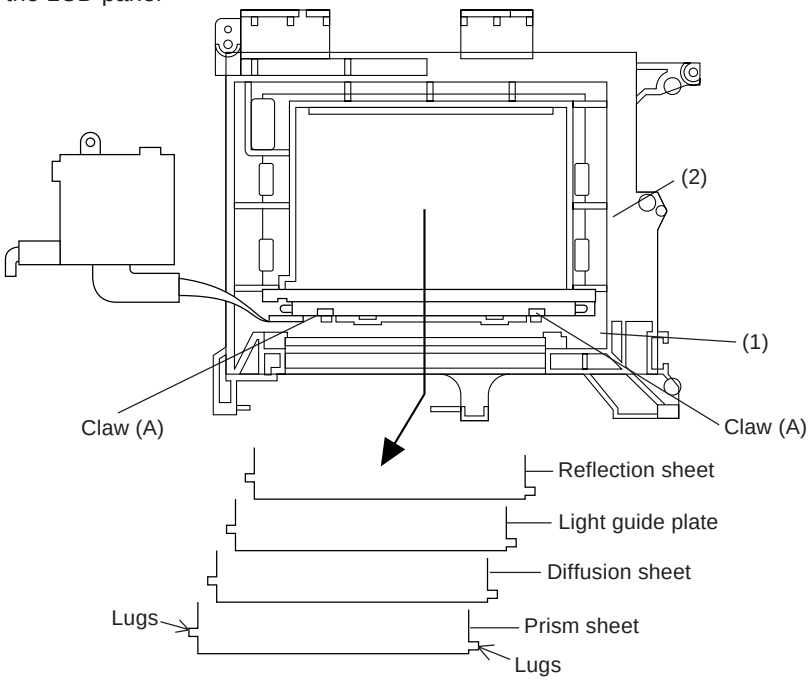

(1) Using the slotted precision screwdriver, push and turn the two claws (C and D) which fasten the cassette compartment lid, and the cassette compartment lid will be removed from the hook area of the cassette component.
(2) Turning the cassette compartment lid in the arrow direction, lift it, and the claws A and B will be disengaged to remove the cassette compartment lid.

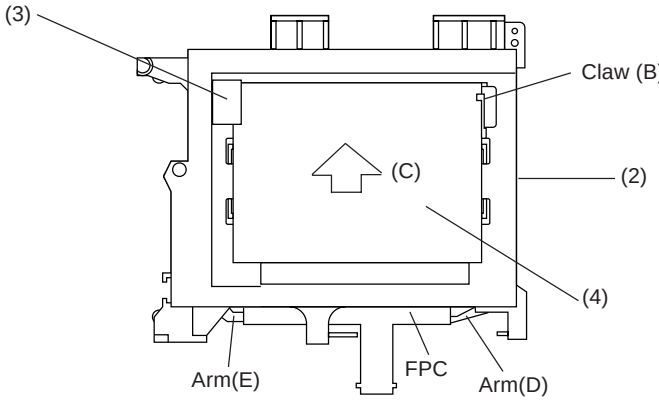
**Note:**
Take care to prevent breaking the claws of the cassette compartment lid.




**Note:**
When fixing the cassette compartment lid, first engage the claws A and B, and then engage the claws C and D, verify that the four claws (A, B, C and D) of the cassette compartment lid are securely engaged as shown in the view above.

<11. Disassembly of the LCD panel>




Disengage the claw, and remove the LCD panel.

1. Disengage two claws (A), and remove the lamp inverter unit (1) from the LCD holder (2).
2. Remove the sheets from the LCD holder (2).
3. Pull the LCD glass retaining (3).
4. Remove the FPC from Arm(D) and (E).
5. Disengage the claw (B), and slide the LCD panel (4) in the (C) direction to remove the LCD holder (2).

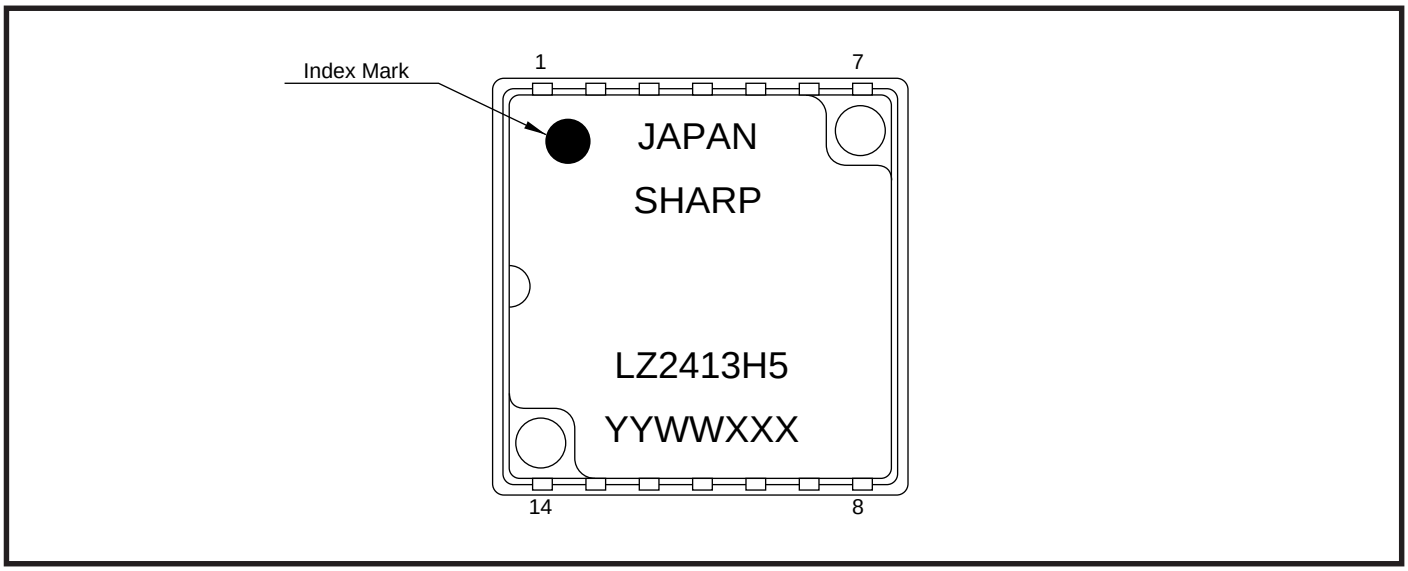
**Note:**
When handling the prism sheet, diffusion sheet, light guide plate and, reflection sheet do not touch any parts other than lugs and sides. Put the light guide plate and reflection sheet between reflectors of lamp. Therefore, install them together with the lamp ass'y.

## 4-3. REPLACEMENT OF CCD SENSOR

### 4-3-1. BEFORE REPLACEMENT

1) The CCD image sensor is more sensitive to electrostatic breakage than C-MOS LSI. Therefore sufficient means to prevent electrostatic damage must be taken when it is replaced.
- Ground the soldering iron.
- Ground also the human body, using the wrist strap(through an 1 Mohm resistor).
- Until the CCD sensor is mounted on the PWB, fit it to the conductive sponge, and short-circuit the foot lead.

2) Take utmost care so that the surface glass of CCD sensor and optical filter are not contaminated and damaged. If any contamination is found, for example fingerprint, wipe it off with silicon paper or clean chamois skin.
3) When replacing the CCD sensor, use the static electricity prevention grounded soldering-iron, and perform quickly soldering.




### 4-3-2. REMOVAL OF CCD

1) Unsolder the CCD sensor leads from the sensor PWB.
2) Take out the sensor PWB.
3) Remove the two screws (6), and remove the sensor holder and CCD sensor.

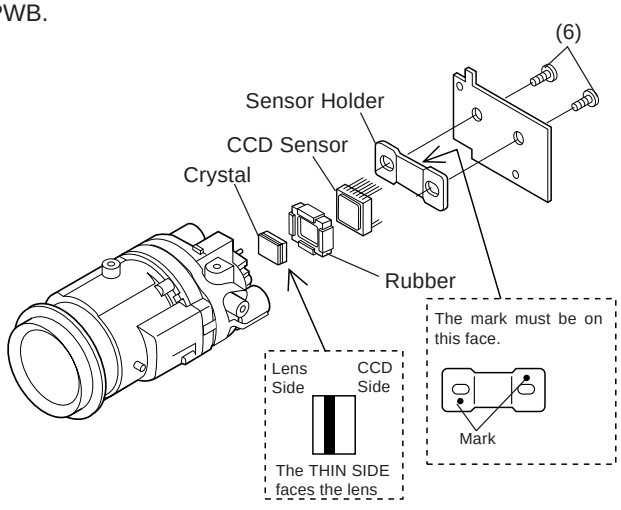
### 4-3-3. MOUNTING OF CCD

1) Place the lens unit upright (since the CCD sensor mount ID faces upward, care must be taken so as not to damage the front lens of unit), put the crystal filter first and then the dust protection rubber into the CCD holder of lens unit. Set the crystal unit with its thin side toward the lens unit.
2) Place the CCD sensor so that the its No. 1 pin is at the right lower (Positioning hole to be at right), and put the CCD sensor into the CCD holder. For smooth and tight fitting, press the right lower part of back of CCD sensor, and then press the left upper part.

Note: Pay attention to the direction of CCD sensor.

3) Place the sensor holder so that its two round markings be visible, and fix the sensor holder with the two screws ((6)LX-HZ0013TAFF).
4) Mount the sensor PWB so that the CCD sensor leads go thorough the PWB holes.
5) Solder the CCD sensor lead to the sensor PWB.

Note: Take care not to apply excessive heat.



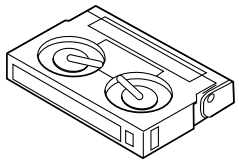
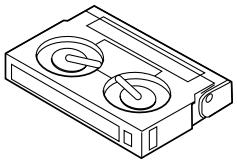
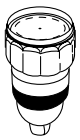
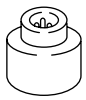
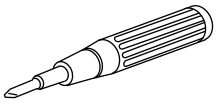
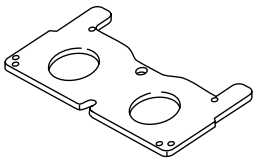
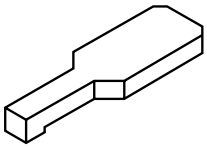
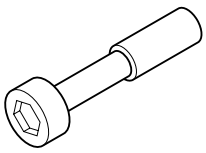
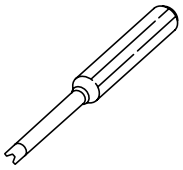
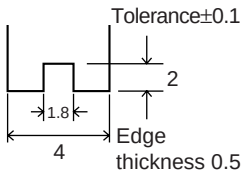
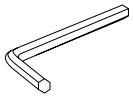
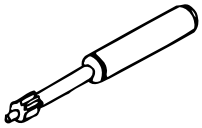
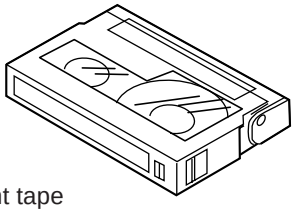
# 5. MECHANISM ADJUSTMENT

## 5-1. MECHANISM CHECKING/ADJUSTING JIGS, TOOLS AND PARTS

### 5-1-1. Mechanism checking/adjusting jigs and tools

Configuration
1. Name
2. Part No.
3. Code
* Model, Uses Remarks

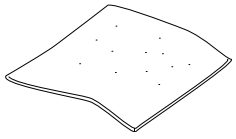
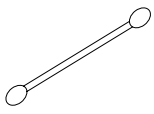
**<Note: The entries of list>**

| | | | | |
|---|---|---|---|---|
|  <br>1. Cassette torquemeter for PB<br>2. JiG8T-012<br>3. CV<br>* (10 g·cm/25 g·cm) |  <br>1. Cassette torquemeter for VS-REW<br>2. JiG8T-032<br>3. CV<br>* (50 g·cm/25 g·cm) |  <br>1. Torque gauge<br>2. JiGTG0045<br>3. CN<br>* For measurement of loading brake torque |  <br>1. Torque gauge head<br>2. JiGTH-MX7U<br>3. BS<br>* For torque gauge listed left |  <br>1. Torque driver (1.5 kg·cm)<br>2. JiGTD1500RT0H<br>3. CB |
|  <br>1. Master plane<br>2. JiGMP-MX7U<br>3. CG<br>* For adjustment of Tu guide height, Si roller height and checking of reel disk height |  <br>1. Height adjusting jig<br>2. 9DAGH-E31S<br>3. BM<br>* For adjustment of Tu guide height and Si roller height |  <br>1. Tu guide height adjusting driver<br>2. 9EQDRiVER-V712<br>3. BL |  <br>  <br>1. Guide roller height adjusting driver<br>2. JiGDRiVERHMX7U<br>3. BU<br>* Bit shape (See the figure above.) | |
|  <br>1. Hex wrench<br>3. —<br>* For loosening or tightening of Motor stator (1.3mm) |  <br>1. Tension Band and Plate Adjusting Jig<br>2. JiGDRiVERMX7U2<br>3. BN |  <br>1. Alignment tape<br>2. VR2ABOPS<br>3. BT<br>TAPE CONTENTS<br>VIDEO IMAGE: MONOSCOPE; AUDIO: L-CH 400Hz, R-CH 1,000Hz; TIME: 30MIN | <Others><br>(1) Slide calipers<br>(2) High-precision screwdrivers (Phillips head, slotted head)<br>(3) Radio pliers (with thin jaws)<br>(4) A pair of tweezers | |

### 5-1-2. Parts for periodic inspection and maintenance.

Configuration
1. Name
2. Part No.
3. Code
* Model, Uses Remarks

**<Note: The entries of list>**

| | | | |
|---|---|---|---|
| 1. Oil<br>COSMOHYDRO HV100<br>* Cosmo Oil Co., Ltd. | 1. Screw locking agent<br>(1401B)<br>* Three Bond |  <br>1. Cleaning paper<br>2. JiGDUSPER<br>3. AP<br>* Dusper Σ (Sigma) (Ozu Co., Ltd.) |  <br>1. Superfine swab<br>* Commercially available item |
| 1. Greases<br>Morycoat YM-103/X5-6020<br>* Dow Coaning | 1. Cleaning liquid<br>(Industrial-use ethyl alcohol) | | |

## 5-2. ITEMS AND TIMINGS OF INSPECTION AND MAINTENANCE

The mechanism of VCR needs the following periodic inspection and maintenance in order that it maintains its high quality. Also, after the machine is repaired, execute the following maintenance and checks regardless of how long it has been used.

### 5-2-1. Inspection and maintenance list

| | Checking/Maintenance point | Usage time (hrs.) | | | | | Possible symptom encountered | Remarks |
|---|---|---|---|---|---|---|---|---|
| | | 500 | 1,000 | 1,500 | 2,000 | 3,000 | | |
| Tape travel system | Tape travelling route (Refer to Section) | □ | □ | □ | □ | □ | • Lateral noise<br>• Unclean head<br>• Screen shaking | Rollers<br>• If abnormal rotation or deflection (significant) is found, replace the roller. Other than rollers<br>• Clean the tape contacting areas. Be sure to use the specified cleaning agent. |
| | Drum (Refer to Section) | □ | □ | □ | □ | □ | | |
| | Video head | □ | □○ | □ | □○ | □○ | • Improper S/N ratio<br>• No color appears. | |
| Driving system | Timing belt | — | ★ | — | ★ | ★ | • Tape does not run.<br>• Tape slackens.<br>• Screen shakes. | • Replace if failure is found. |
| | Pinch roller | □ | □ | □ | □○ | □ | | |
| | Capstan D.D. motor | — | ○ | — | ○ | ○ | | |
| | Relay Pulle shaft<br>Pulle gear shaft | — | Δ | — | Δ | Δ | • Abnormal sound | • Apply oil. (Oil : COSMOHYDRO HV100)<br>Note:<br>After oil is applied to the drive gear shaft, slightly wipe it off with swab. |
| | Drive gear shaft | — | Δ | — | Δ | Δ | | |
| | Loading motor | — | ★○ | — | ★○ | ★○ | • Not ejectable<br>• The specific mode cannot be set. | • Replace if failure (abnormal sound) is detected. |
| Performance check | Abnormal sound | ★ | ★ | ★ | ★ | ★ | | • If conformance to the standard is not ensured, replace part. |
| | PB/VS-REW take-up torque | — | ★ | — | ★ | ★ | | |
| | PB/VS-REW back tension torque | — | ★ | — | ★ | ★ | | |
| | Tu brake | — | ★ | — | ★ | ★ | | |
| | HC (Head Cleaner) | — | ○ | — | ○ | ○ | | |

Oil: COSMOHYDRO HV100
Greases: MORYCOAT YM-103/X5-6020
Screw locking agent: THREE BOND 1401B
Cleaning liquid: Industrial-use ethyl alcohol

○ : Replace.
□ : Clean.
Δ : Apply oil.
★ : Check.

### 5-2-2. Notes and cautions

(1) Any cut washers, once removed for parts replacement or for other reason, must be replaced with new ones.
(2) The mechanism of this VCR does not involve any volume adjustment. If the specified range is not satisfied, either cleaning or replacing the parts is required.
(3) Oils
  a) Be sure to use the specified oils (different viscosity may cause troubles).
  b) For the bearings, be sure to use oil that is free form dust and other foreign substances. (Dust or foreign substance contained in the oil may cause wear or seizure of the bearings.)
  c) A drop of oil represents the amount of oil which is held on the needle top as shown in the figure 1.
(4) The circuit repair must be executed without removing the V frame.
(5) For operating the mechanism alone, actuate it with the motor. The terminal-to-terminal voltage must be DC4V or less.
(6) When installing the cassette control, press the part A shown in Figure 2.
  *Do not press other parts.
(7) Take care so that the whole mechanism is not deformed.

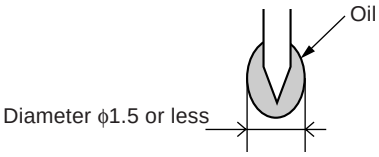



**Figure 1**

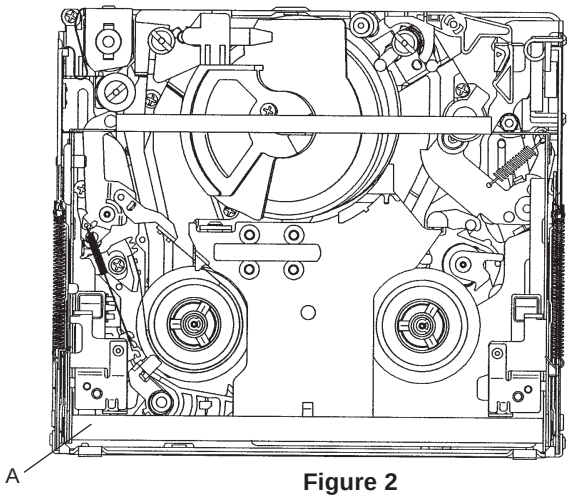



**Figure 2**

## 5-3. MECHANISM CHECKS AND ADJUSTMENTS

The description given below relates to the general field services, but does not relate to the adjustment and replacement that require high level equipments, jigs, and technical skills.
In order to maintain the initial characteristics of the machine, it is necessary to execute the maintenance and check and to prevent damage to tapes and other parts. For adjustments which need jigs, be sure to use the jigs.

**Notes and cautions**

(1) For mechanism checks and adjustments, be sure to use the AC adapter as the power supply.
(2) For running the tape, be sure to install the cassette control ass'y in advance. (If the cassette control ass'y is to be removed subsequently after its installation.)

### 5-3-1. Checking the reel disk height

(1) Remove the cassette control ass'y.
(2) Taking due care not to let the master plane touch the tape running areas such as the drum and the guide rollers, position the master plane so that the two guides (A and B in the figure 1) are set in the holes of master plane, then properly set it in the mechanism.
(3) Using the slide callipers or the like, check that the distance from the upper surface of master plane to the reel support surface of the S/Tu reel disk is within the specified range. (Figure 2)

**Note:**

When measuring, do not apply excessive force to the reel support surface of reel disk.

(4) If the measurement is not within the specified range, replace the reel disk ass'y.
(5) Check the items (2) to (4) above in the following two modes.
a) Standby mode
b) Playback (recording) mode

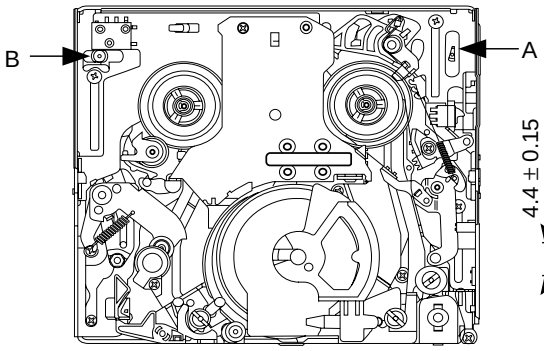



**Figure 1**

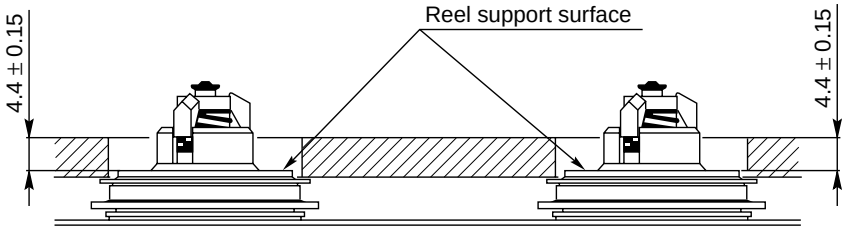



**Figure 2**

### 5-3-2. Checking the take-up torque for playback (recording)

(1) Set the torque cassette (JiG8T-012) in position, and check in the SP-mode recording mode (tape recorded in SP mode) that the torque at the tape taking-up side is within the standard range.

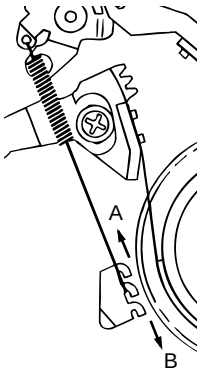
Standard of take-up torque for SP-mode recording (playback)

9 ± 3 g·cm with ripples less than 4 g·cm
(If the torque ripples appear, read the center value of torque between the ripples.)

### 5-3-3. Checking and adjusting the back tension torque for playback (recording)

(1) Checking
1) Set the torque cassette (JiG8T-012) in position, and check in the SP-mode recording mode (tape recorded in SP mode) that the torque at the tape supply side is within the standard range.
Standard of back tension torque for SP-mode recording (playback):
8 ± 2 g·cm with ripples of less than 2 g·cm
(Torque ripple must be within 8 ± 2 g·cm)

(2) Adjustment
1) If the back tension torque is not within the standard range, adjust the tension spring hooking position. If the back tension is too high, hook the spring in the direction A. If the back tension is too low, hook the spring in the direction B.




**Note:**

1. After back tension torque adjustment be sure to check the tension pole position.

## 5-3-4. Checking and adjusting the tension pole position

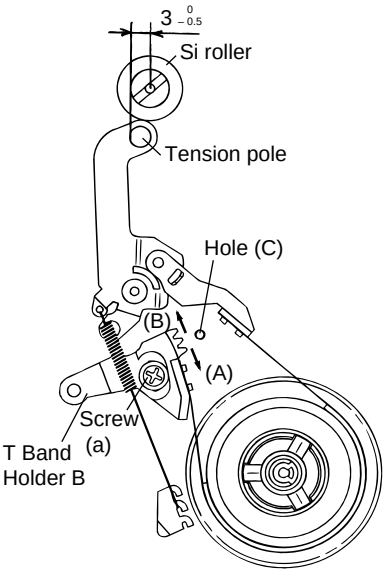
(1) Check

When winding of P6-120 tape is started, check whether the tension pole is in the specified position against Si roller as shown or not.

If it is not in the specified position, remove the cassette and adjust the position in the following procedure.

(2) Adjustment

1. Don't set up any tape, and select the PB mode. (Refer to Item 5-5-1-(4).)
2. Slightly loosen the screw (a) (to such a strength as the T band holder B can be moved).
3. If the tension pole is in the inner position than specified, dislocate the T band holder B in the arrow (A) direction and if it is in the outer position, dislocate it in the arrow (B) position. Then, tighten the screw (a). (For reference, dislocate it 0.4 to 0.8 mm outer from the position specified above.) For the position adjustment, it is convenient to use the position adjustment screwdriver (JiGDRiVERMX7U2). (Set it in the hole (C).)
4. Check the position in the "(1) Check" procedure described above.
5. If it is not in the specified position, repeat the adjusting procedure 1 thru 3.




**Note:**

- Tightening torque of screw (a) 70 mN·m
- To check the position, be sure to run the tape.
- If the cassette compartment assembly is removed, it makes the work easier. (Refer to Item 5-5-3.)

## 5-3-5. Checking the take-up torque for rewind playback (VS-REW)

(1) Remove the cassette compartment ass'y and set to the sensor OFF mode.

(2) Set the torque gauge (JiGTG0045) on the S reel disk, and check in the rewind playback (VS-REW) that the torque at the supply side is within the specified range.

Standard of take-up torque in rewind playback (SP mode)

31 ± 5 g·cm with ripples less than 5 g·cm.

(If the torque ripples appear, read the center value of torque between the ripples.)

## 5-3-6. Checking the back tension torque for rewind playback (VS-REW)

(1) Set the torque cassette (JiG8T-032) in position, and check in the rewind playback (VS-REW) mode that the torque at the tape take-up side is within the specified range.

Standard of back tension torque in rewind playback (SP mode):

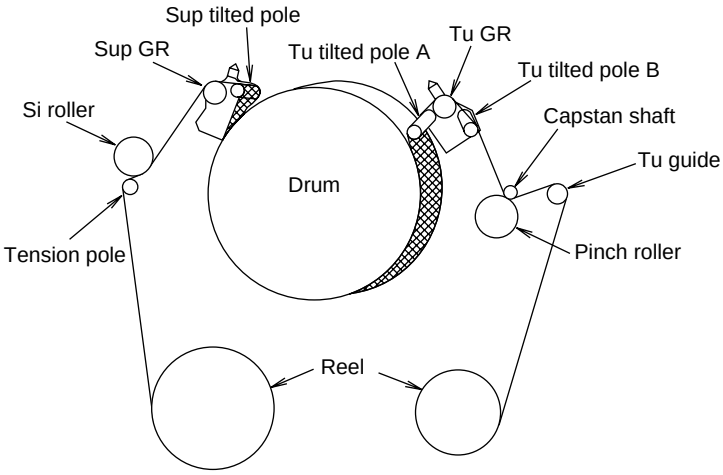
14 ± 5 g·cm with ripples less than 5 g·cm

(If the torque ripples appear, read the center value of torque between the ripples.)

# 5-4. ADJUSTMENT OF MECHANISM TAPE TRAVEL SYSTEM

## 5-4-1. Preparation for adjustment

(1) Clean the tape running areas (guide poles, rollers, drum, Capstan shaft, Pinch roller) (Figure 1)
(2) Connect the oscilloscope to the following TPs.
RF output ..... TL7410
H-SW-P ..... TL7417
GND ..... TL7413
(3) Playback the alignment tape (VR2ABOPS).
(4) Ascertain that each guide is free from remarkable curl.
(5) Ascertain that the RF waveform of inlet and outlet sides is flat on the oscilloscope (Figure 2, (a)). Unless the waveform is flat, (Figure 2, (b), (c)), make an adjustment as follows.




**Tape travel system (Figure 1)**

## 5-4-2. Adjusting the Sup GR and Tu GR

(1) Turn the Sup and Tu guide rollers to get the flat waveform at the inlet and outlet sides.

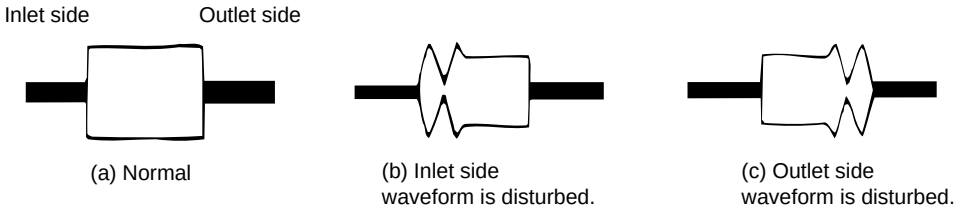



**Figure 2**

## 5-4-3. Adjusting the Si roller height

After replacement of Si roller preset and adjust the Si roller height.

(1) Si roller height presetting
Adjust the height from the upper surface of mechanism chassis to the upper surface of lower flange with the aid of jig. Then lower it by 90° (clockwise).

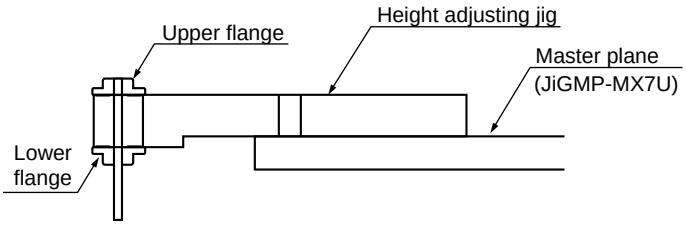



**Figure 3**

(2) Adjusting the Si roller
1 Playback the tape to set the V/SR mode.
2 Ascertain that the tape is not folded on the lower flange (B) of Si roller. (Figure 4)
If tape folding is found, turn the upper flange (A) of Si roller with the driver (clockwise) to eliminate the folding.
3 Playback the alignment tape (VR2ABOPS).
4 Adjust the Sup GR and Tu GR by the procedure described in section 4-2 above.
5 After V/S F,R perform playback so as to ascertain that the waveform rises horizontally within 2 seconds.
6 Unless the normal waveform is obtained (Figure 5), turn counterclockwise the upper flange (A) of Si roller, and repeat the step (5) above. Repeat the steps (5) and (6) until the normal waveform is obtained. At this time ascertain that the inlet travel does not change in the normal playback state. If any change is found, adjust the Sup GR, and redo the step (5).

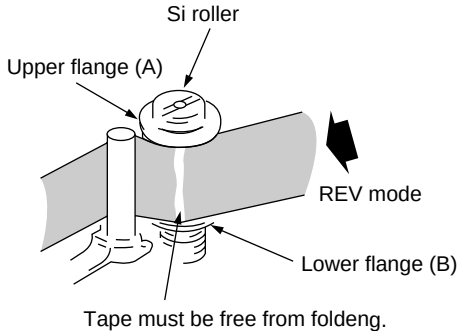



**Figure 4**

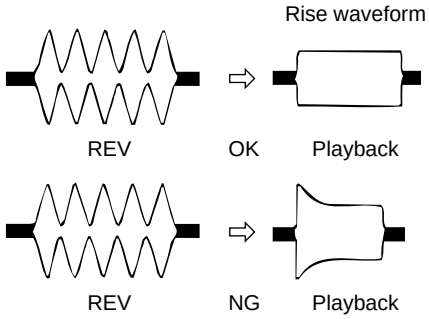



**Figure 5**

## 5-4-4. Adjusting the Tu guide

After replacement of Tu guide preset and adjust the height.

(1) Tu guide height presetting (Figure 6)

Adjust the height from the upper surface of mechanism chassis to the upper surface of lower flange with the aid of jig.

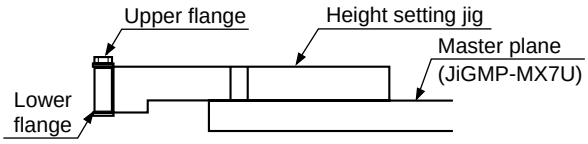



**Figure 6**

(2) Adjusting the Tu guide (Figure 7)

1 Playback the alignment tape (VR2ABOPS).

2 Check that the tape runs at the same height near the capstan shaft in case of V/S F and V/S R.

3 If the tape running position in case of V/S R is higher than the tape running position in case of V/S F, turn clockwise the Tu guide nut.
If the tape running position in case of V/S R is lower than the running position in case of V/S F, turn counterclockwise the Tu guide nut.

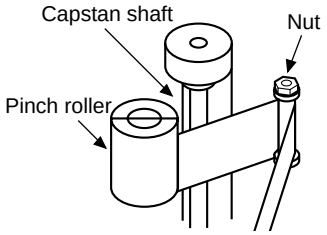



**Figure 7**

## 5-4-5. Checking the V/S F and R waveforms (Figure 8)

(1) Playback alignment tape (VR2ABOPS), and set the V/S R mode. At this time ascertain that the waveform crest pitch is kept constant for more than 5 seconds.

(2) Set the V/S F mode. At this time ascertain that the waveform crest pitch is kept constant for more than 5 seconds.
Unless the constant pitch is obtained, execute the checks of Section 4-2, 3, and 4.

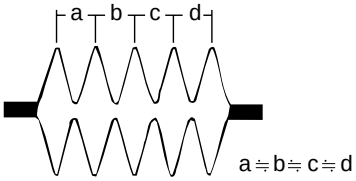



**Figure 8**

## 5-4-6. Checking after adjustment

(1) Envelope check

1 Playback the alignment tape (VR2ABOPS).

2 Ascertain that the envelope maximum to minimum ratio is 65% or more. (Figure 9)

3 Ascertain that the waveform does not change remarkably. (Figure 10)

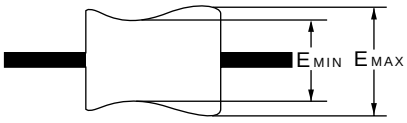



**Figure 9** $\frac{E_{MIN}}{E_{MAX}} \geqq 65\ (\%)$

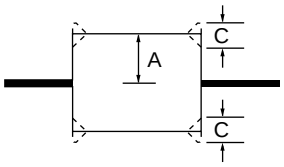



**Figure 10** C≦1/8A

(2) Rise check

1 Playback the alignment tape (VR2ABOPS).

2 Once eject the cassette, and then load it again.

3 Set the playback mode, and ascertain that the RF waveform rises horizontally within 2 seconds. At this time ascertain that there is no tape slackness near the pinch roller.

4 After V/S F, R and FF/REW execute playback, and ascertain that the RF waveform rises horizontally within 2 seconds. At this time ascertain that there is no tape slackness near the pinch roller.

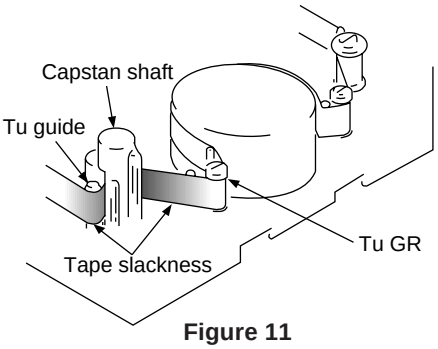



**Figure 11**

(3) Checking the tape travel

1 When the tape is played back, ascertain that tape lift and tape curl of 0.3 mm or more do not occur at the lower flange of Si roller, upper flange of Sup GR, upper flange of Tu GR, and upper/lower flange of Tu guide.

2 In case of V/S F and R ascertain that no curl is found at each flange.

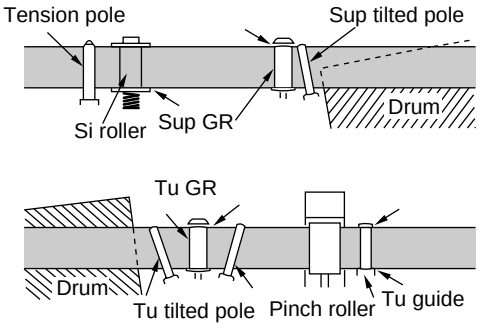



**Figure 12**

## 5-4-7. Checking and adjusting the playback switching point

Refer to the description of playback switching point adjustment in section of VCR circuit adjustment.

## 5-5. MECHANISM ASSEMBLING AND PARTS REPLACEMENT (DISASSEMBLING AND ASSEMBLING)

Below is given an explanation of assembling of mechanism and its parts replacement.
The removal of cabinet and Circuit Board is explained in the relevant service manual.

**Notes**

1 After removal of cut washers be sure to replace them with new ones.
2 Do not place the mechanism upside down on the table. Otherwise, the mechanism part may be deformed or damaged, resulting in malfunction.
3 When assembling, take care so that screw, washer or other foreign substance do not enter. Otherwise mechanism malfunction may occur.
4 Be sure to use the specified cleaning liquid, oil, grease and screw lock as listed below. Otherwise mechanism malfunction may occur.

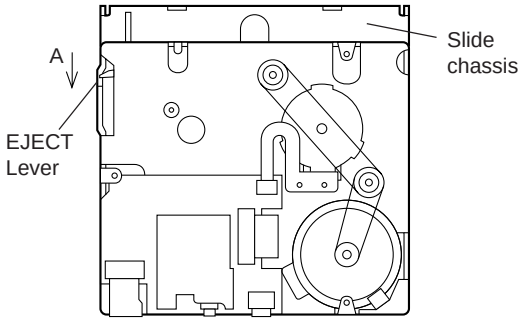
| | |
|---|---|
| Oil: | Cosmo Oil Co., Ltd.<br>COSMOHYDRO HV100 |
| Greases: | Dow Coaning<br>MORYCOAT YM-103/X5-6020 |
| Screw lock: | THREE BOND<br>1401B |
| Cleaning liquid: | Industrial-use ethyl alcohol |

### 5-5-1. Mechanism modes

To actuate the mechanism, apply DC3 to 4V to the L motor. At this time the L motor connector must have been disconnected in advance.
Below is given an explanation of the mechanism mode necessary for mechanism check, adjustment and replacement.

(1). [EJ] (Eject) mode (See Figure 1)

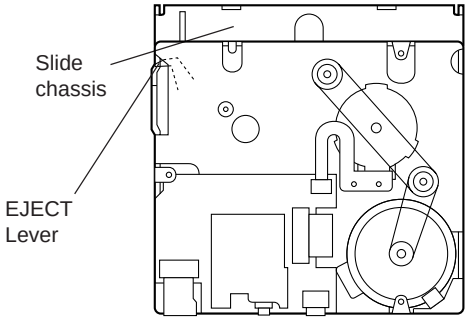
In this mode, it is mechanically positioned to eject the cassette. It is the position where the EJECT lever is moved the farthest in the direction A in the S/B mode. (In this mode, the cassette compartment assembly can not be locked.)




[EJ] mode
**Figure 1**

(2). [S/B] (Standby) mode (See Figure 2)

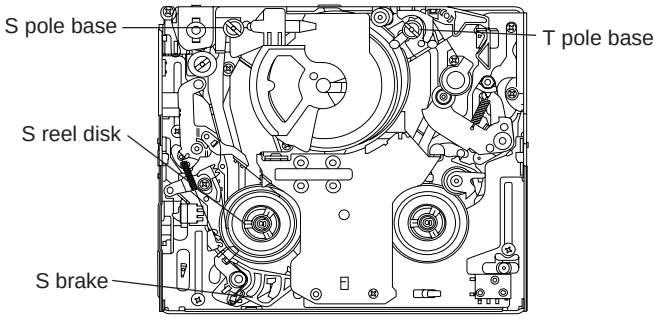
When the cassette is loaded, the mechanism is set to the S/B mode. In this mode the slide chassis is most far from the drum. In this mode the Eject lever is in position shown in Figure 2 (in position where the cassette control ass'y can be locked).




[S/B] mode
**Figure 2**

(3). [STOP] mode (See Figure 3)

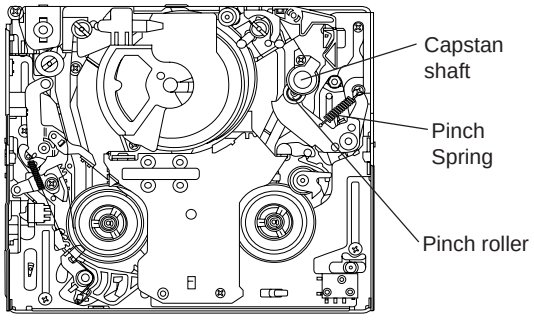
In the STOP mode the S.T pole base is depressed in the STOP position (or Rec Lock position in CAMERA mode), and the S brake is in contact with the S reel disk.




[STOP] mode
**Figure 3**

(4). [PB] mode (See Figure 4)

In this mode, it is positioned for the replay, record and so on. It is the mechanical position where the pinch roller is pressed against the capstan shaft to make the pinch-pressing spring the most longest.




[PB] mode
**Figure 4**

## 5-5-2. Cassette control ass'y

<Disassembling>

(1) Set the unit to the EJECT mode, and let the housing stand upright. Or set the unit to the STANDBY mode, press the lock lever in the arrow direction, and let the housing stand upright. (See Fig. 5: in the direction ⓐ or ⓑ) (When pushing in the direction ⓐ, slightly lift the housing by hand to release the lock lever.)
(2) Remove the four screws ② and take out the down guide ③.
(3) Slide the two link support shafts ⓒ and the two roller shafts ⓓ to the round openings ⓖ on their respective slide chassis slits (two at ⓔ and two at ⓕ).
(4) Deflect the roller shafts ⓓ a little inward to get them out of the round openings ⓖ on the slide chassis. (Be careful not to deform the inner links.)

<Reassembling>

(1) Set the unit to the STANDBY mode.
(2) Deflect the roller shafts ⓓ a little inward, and fit them into the round openings ⓖ on the slide chassis. (Be careful not to deform the inner links.)
(3) Align the flanges of roller shafts ⓓ with the slide chassis slits ⓕ. While sliding the flanges, fit the support shafts ⓒ in the slide chassis slits ⓔ, and slide them until they reach the slits.
(4) Attach the down guide. (While pressing the guide in the direction ⓘ, tighten the screws until the gap ⓙ between the down guide ③ and the support shafts ⓒ becomes zero.)
Tightening torque: 70±7 mN·m (0.7±0.07 kg·cm)

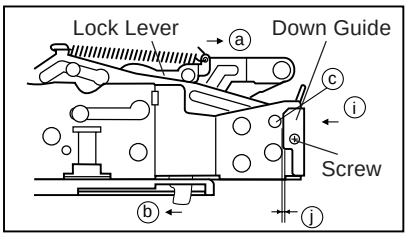
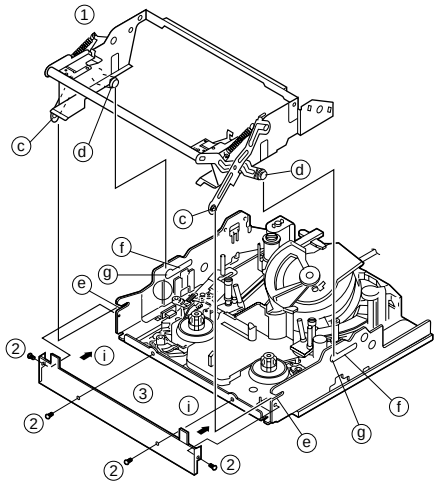



**Figure 5. Lock lever section**

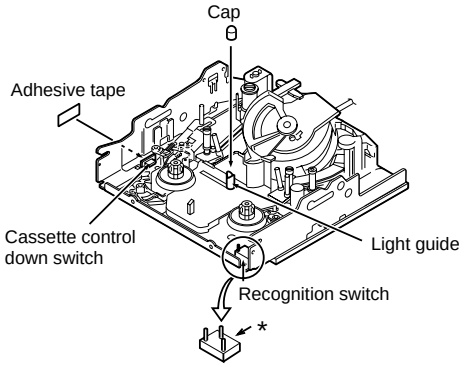


Screw tightening torque (4 locations) 0.069±0.007 N·m (0.7±0.07kg·cm)

**Figure 6**

## 5-5-3. Actuating the mechanism with the cassette control ass'y removed

(1) Turn on the power supply with the cabinet and camera unit removed, referring to the Service Manual (so as to actuate the mechanism).
(2) Put the cap on the light guide.
(3) Press the cassette control down switch through the adhesive tape in the arrow direction so as to turn it on. At this time take care to avoid contact with the cassette. Keep the switch pressed (if the switch is turned off, unloading occurs).
**Note:** To set the Rec mode, press the pin (marked with the asterisk *) of recognition switch (this operation is not necessary in other modes).




## 5-5-4. Drum and Drum base

*The upper drum and the lower drum have been replaced until now, respectively. However, for this model, they are replaced as the upper/lower drum ass'y. When replacing the drum, put on gloves and be careful not to damage it.

<Disassembling>

(1) Drum base (Common to both types)
Remove the three fixing screws to remove the drum base as shown in the Figure 1.

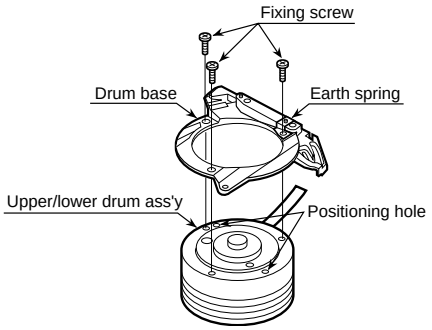



**Figure 1**

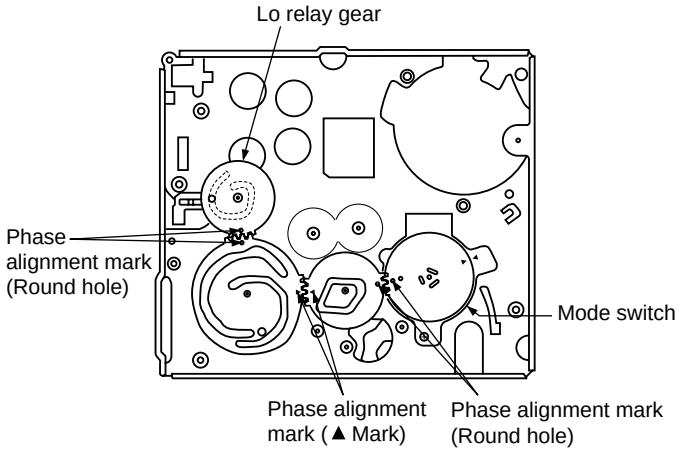
<Reassembling>

Follow steps opposite to the drum disassembling method.
(1) Drum base
Adjust the positioning pins and secure the drum base with screws. (3 pcs.)
(2) Drum ass'y
Install the drum ass'y to the main chassis and secure it with screws. (3 pcs.)
(3) Tape guide
Adjust the positioning pins and secure the tape guide with a screw. (1 pc.)

### 5-5-5. Phase matching

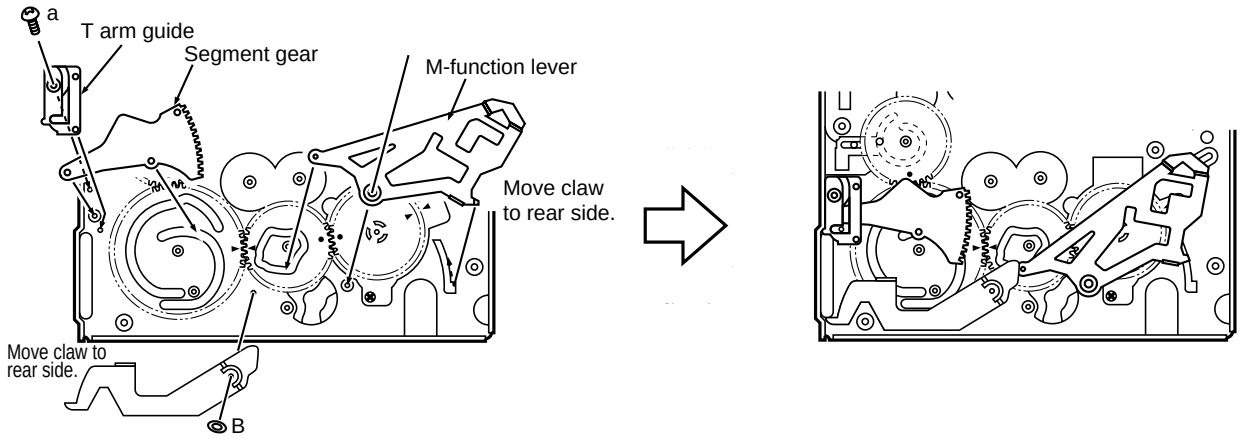
The phase of the following parts must be matched as shown in the figure right.
(Ascertain that the ▲ marks and round holes align.)

(1) Lo relay gear (2) Main cam
(3) Sub-cam (4) Mode switch



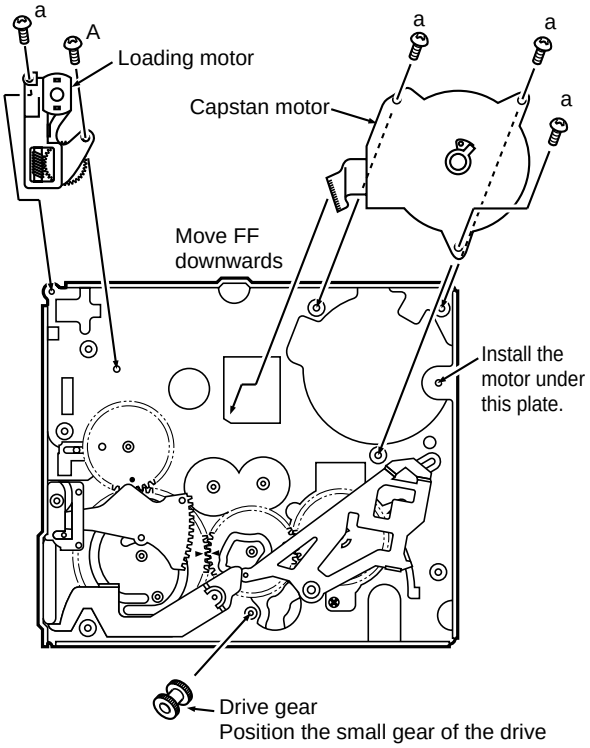

## 5-6. MECHANISM ASSEMBLING METHOD

(1) Adjust the phase of each part.
(2) Install screws and washers.
(3) Install the segment gear, T arm guide and the M-function lever. Install the eject lever.



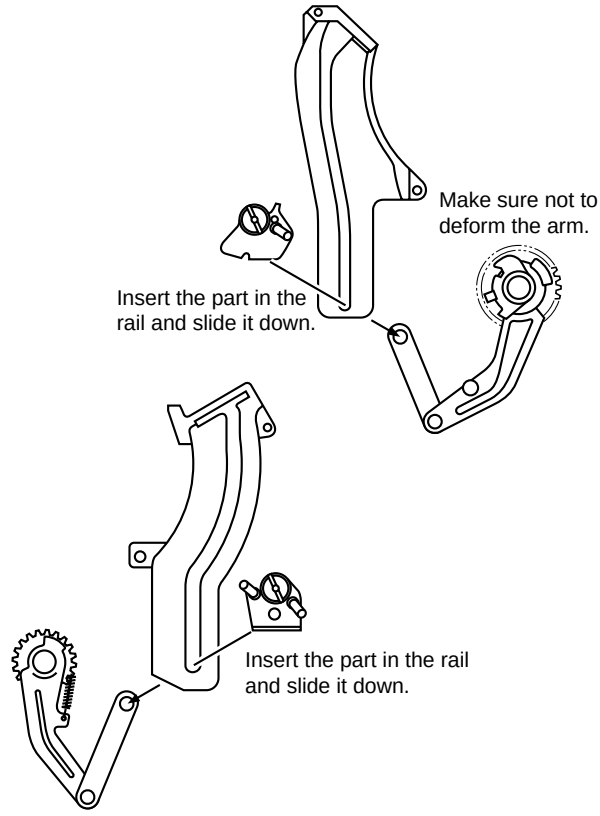

| | Item | Tightening torque | Quantity |
|---|---|---|---|
| a | S Tight M1.4 x 3 | 70mN·m (0.7kgf·cm) | 1 |
| B | ø0.8-ø3-t0.2 | ———— | 1 |

(4) Install the loading block assembly and the capstan motor.
(5) Install the drive gear. At this time, pay attention to the direction of gear. (The small gear must be located in the chassis side.)

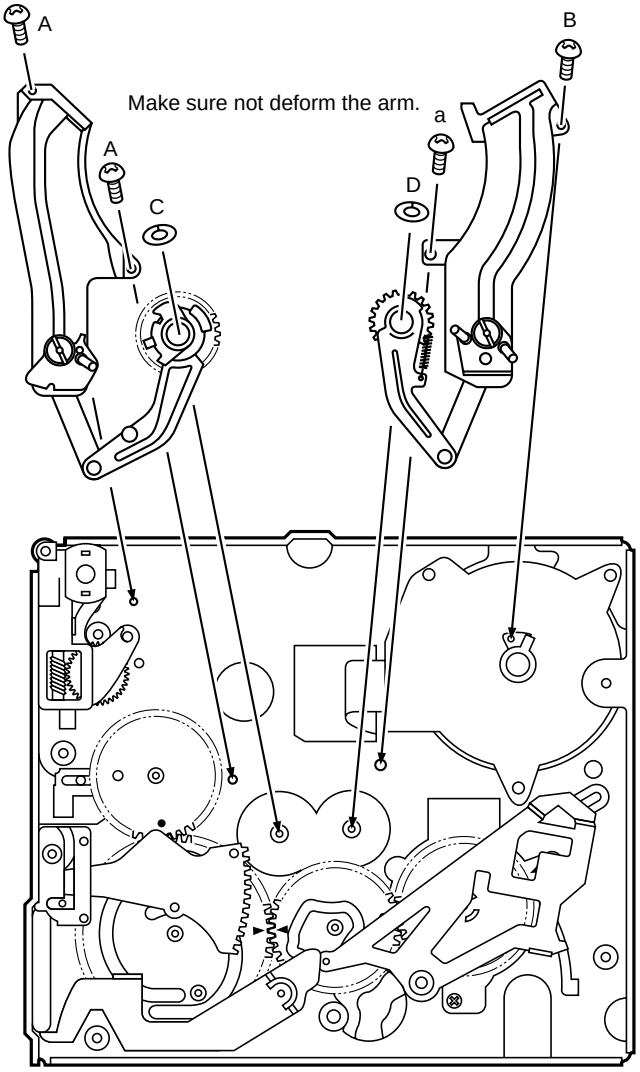



| | Item | Tightening torque | Quantity |
|---|---|---|---|
| A | S Tight M1.4 x 2.5 | 70mN·m | 1 |
| a | S Tight M1.4 x 3 | 70mN·m | 4 |

(6) Install the guide rail assembly.

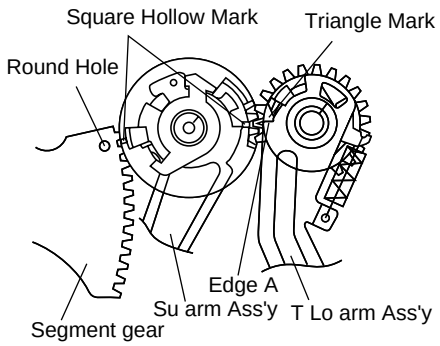



(7) Install the guide rail assembly taking care to position it correctly.

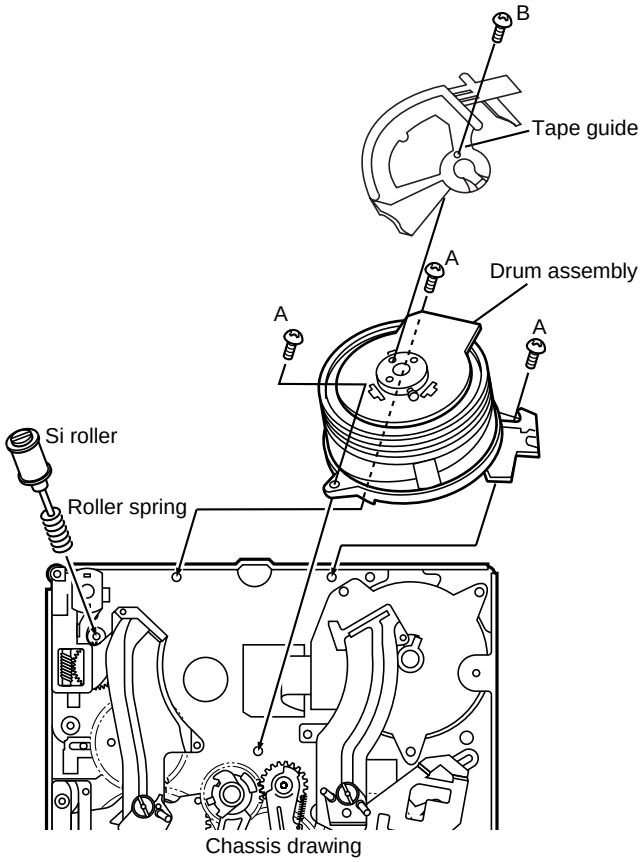



| | Item | Tightening torque | Quantity |
|---|---|---|---|
| A | S Tight M1.4 x 2.5 | 70mN·m | 2 |
| B | S Tight M1.4 x 4 | 40mN·m | 1 |
| C | ø0.8-ø3-t0.2 | ———— | 1 |
| D | ø2.1-ø5-t0.25 | ———— | 1 |
| a | S Tight M1.4 x 3 | 70mN·m | 1 |

Align the marks on the parts.

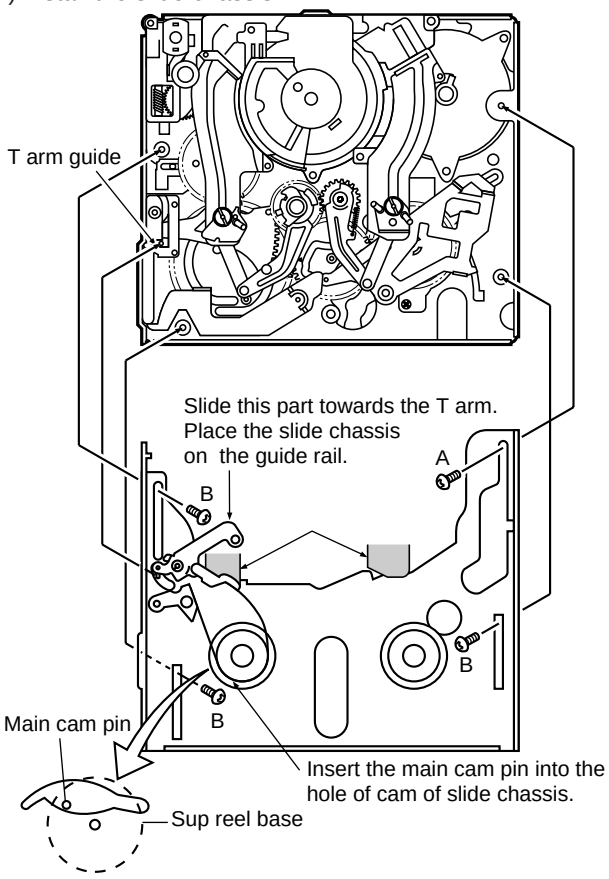


(8) Install the drum assembly in the chassis.
(9) Install the tape guide in the drum assembly.
(10) Install the Si roller.



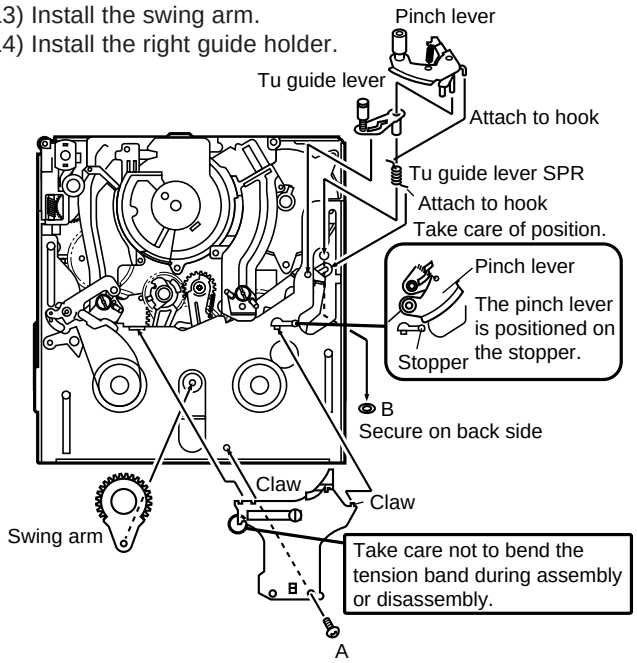

| | Item | Tightening torque | Quantity |
|---|---|---|---|
| A | S tight M1.7 x L5.3 | 100mN·m | 3 |
| B | S tight M1.7 x L2.5 | 60mN·m | 1 |

(11) Install the slide chassis.




| | Item | Tightening torque | Quantity |
|---|---|---|---|
| A | M1.4 x 1.5 ø4 | 40mN·m | 1 |
| B | M1.4 x 1.5 ø3.5 | 40mN·m | 3 |

(12) Install in the following order: T guide lever spring, T guide lever, pinch lever.
(13) Install the swing arm.
(14) Install the right guide holder.




| | Item | Tightening torque | Quantity |
|---|---|---|---|
| A | S tight M1.4 x 2.5 | 70mN·m | 1 |
| B | CW ø0.8-ø3-t0.2 | 70mN·m | 1 |

# 6. ADJUSTMENT OF VCR AND CAMERA

## 6-1. INITIAL SETTING OF E²PROM IC

### 6-1-1. E²PROM data alterable ways

1) Set the switch of main body to CAM, and use the remote control (RRMCG0033TASA) for adjustment to turn on the adjustment mode.
2) VCR adjustment address setting.
   V ADJ
   0000 "0000" is blinking
   After an objective address was established, play key is pushed and set.
   In addition, numerical change uses a "REW" or "FF" key.
3) VCR adjustment data setting.
   V ADJ
   0000 ## Value of "##" differs by an address.
   After an objective data was established, "PLAY" key is pushed and set.
4) When data of other address are changed successively, push "STOP" key, and please repeat operation to 5) from 3).
5) When SW of the substance is turned into off, data are written to E²PROM from systematic microcomputer.

### 6-1-2. IC705 (E²PROM)

When the IC705 has been replaced, make the following settings and adjustments.

1. Remove the backup battery (CR2025).
2. Turn power switch to CAMERA.
3. Setting up the V ADJ mode as follows.

* After press the CONTINUE key, press the VCR ADJ key on service remote control (RRMCG0033TASA).

4. After setting the above data, clear the V ADJ mode and turn off the power by pull out the battery pack or DC cable.
   Neglect about 30 seconds after turned of power, because data of address becomes effective after microcomputer is reset.
   Now the setting of data is completion.

**Adjustments to follow**

**Make the system controller servo, VCR, and LCD adjustments according to their respective instructions.**

| Data / Address | AH150U | AH160U |
|---|---|---|
| 01 | 00 | 00 |
| 09 | FF | FF |
| 02 | 01 | 01 |
| 0A | FE | FE |
| 03 | 00 | 00 |
| 0B | FF | FF |
| 04 | 00 | 00 |
| 0C | FF | FF |

### 6-1-3. Camera adjustment

When the IC2 has been replaced, make the camera adjustment according to its instructions.
All the camera adjustment data are written in the E²PROM provided on the lens unit. Therefore, when the lens is replaced, the camera must be adjusted again according to the camera adjusting procedure.

## 6-2. ADJUSTING THE Y/C, AUDIO AND LCD CIRCUITS ON MODELS WITHOUT A/V IN MODE (A/V IN MODE SET-UP PRODUCE)

1) Set the switch of main body to CAM, and use the remote control (RRMCG0033TASA) for adjustment to turn on the adjustment mode.
2) Set up the adjustment address (example : EE mode adjustment address 14). Once this address has been set up, the A/V IN mode (test mode) is automatically brought and the images appear on the LCD display.
3) Now make the adjustments referring to the instruotions in the manual.

## 6-3. ADJUSTMENT OF VCR SECTION

### 6-3-1. Before starting the electric circuit adjustment

- Electric circuit adjustment becomes necessary, in most cases, when any of the wear mechanical parts or the video head has been replaced. Before starting the electric circuit adjustment, be sure to check that the mechanical parts work well (i.e., the mechanical parts have all been perfectly adjusted). In case a trouble or troubles are found in the electric circuitry, be sure to pinpoint the cause(s) by using the measuring instruments described below. After locating the trouble spot(s), then proceed to repair, replacement or adjustment. Do not change the positions of the controls when adequate measuring instruments are not available.
- In order to implement a higher-density, smaller machine, most of the electric circuit parts used on the Circuit Boards are of small-sized, surface-mounted type. For replacing part(s) as after-sales service, work with a soldering iron as speedily as possible. The heat resistance of the surface-mounted components is poor, when compared with the larger-sized discrete parts used for television sets and stationary decks, owning to their small sizes. Therefore, exercise due care to avoid long-time exposure of the pins of these parts to the heat of the soldering iron which may possibly damage them. Such care should be exercised especially for chip-layer capacitor replacement. It is advisable to use a temperature-controlled ceramic soldering iron (temperature at the tip: 250°C, contacting time: less than 5 seconds).

**< Adjusting the video/LCD section >**

• Measuring instruments:

| | | |
|---|---|---|
| *Color monitor TV set<br>*Digital voltmeter<br>*DC power supply<br>*Audio generator (CR oscillator)<br>*Alignment tape (JiGWR5-5NSP)<br>(JiGWR5-8NSE) | *Oscilloscope<br>*Frequency counter<br>*Signal generator<br>*AV output cable (accessory)<br>*Video recording tape<br>(For Y/C, audio and servo adjustments) | *DC cable (AC adapter accessory)<br>*Video extension cables<br>*Vector scope<br>*AC adapter |

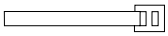
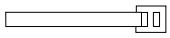
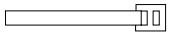
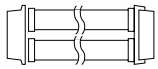
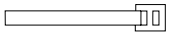
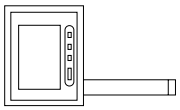
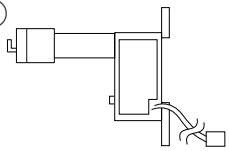
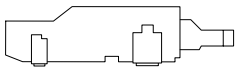
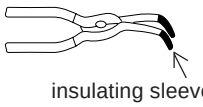
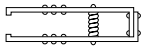
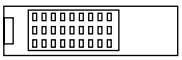
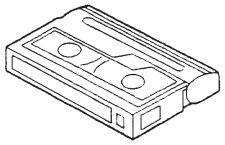
## 6-3-2. Servicing the VCR section Adjustment

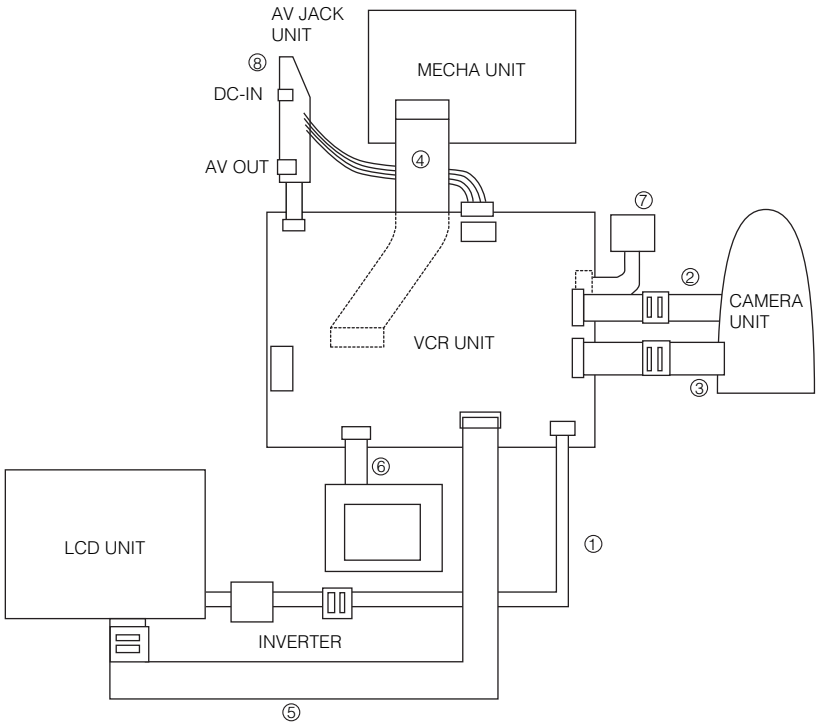
### 6-3-2-1. Typical connections

Configuration

**<Note: The entries of list>** 1. Name 2. Part No. 3. Code 4. Note * Model, Uses Remarks

**<Extension Cable etc.>**

| | | | | |
|---|---|---|---|---|
| ①<br>  <br>1. Extension Cable Inverter~VCR (7pin)<br>2. QCNW-1265TAZZ<br>3. AX | ②<br>  <br>1. Extension Cable Camera~VCR (20pin)<br>2. QCNW-1774TAZZ<br>3. BH | ③<br>  <br>1. Extension Cable Camera~VCR (24pin)<br>2. QCNW-1382TAZZ<br>3. BD | ④<br>  <br>1. Extension Cable MECHA~VCR (70pin)<br>2. QCNW-1534TAZZ<br>3. BS | ⑤<br>  <br>1. Extension Cable LCD~VCR (24pin)<br>2. QCNW-1382TAZZ<br>3. BD |
| ⑥<br>  <br>1. Operation Unit<br>2. QSW-Z0287TAZZ<br>3. AW | ⑦<br>  <br>1. Battery Terminal Unit<br>2. QTANZ0146TAZZ<br>3. AK | ⑧<br>  <br>1. AV Jack Unit<br>2. RUNTK0352TAZZ<br>3. AS |  <br><br>1. Connector fitting and withdrawing extractor |  <br>1. Connector fitting and withdrawing tweezers<br>2. 9EQPiNSET06GE<br>3. BR |
|  <br>1. Service remote control<br>2. RRMCG0033TASA<br>3. BT |  <br>· Alignment Tape<br>JiGWR5-5NSP (NTSC) .... Normal 8 TAPE (MONO)<br>JiGWR5-8NSE (NTSC) ... Hi8 TAPE (MONO)<br>* Y/C Audio Alignment | | | |



• Types of test modes

| TEST No. | Title | Contents | Sensor on/off |
|---|---|---|---|
| 1 | Sensors off | All sensors but the cassette controller switch, dew sensor and battery sensor stay off. | |
| 3 | Automatic battery sensor adjustment | Battery sensor's input voltage put in memory. | |
| 4 | Battery adjustment error display | Battery sensor's adjustment errors are displayed at the right of the "past errors" area. | All sensors on<br>All but sensors on |
| 5 | PASS mode | Track shift mode (1/4 shift) | All sensors on |
| 6 | Camera adjustment mode | Camera adjustment mode | [VCR interrupted] |
| 7 | VCR adjustment mode | VCR adjustment mode | |
| 8 | Automatic switching point adjustment (STOP ADJ) | Play standard tape and call this mode. Switching point is automatically adjusted. | |

① When the battery adjustment mode is selected from the camera adjustment mode with a cassette with the erase protection tab, the VCR is automatically put in the REC mode.

• Below discussed are these seven test modes.

① [TEST No. 1] Sensors off mode
All the sensors, except for the cassette controller switch, dew sensor and battery sensor, stay off. This enables to bring the VCR in the loading mode without tape. The VCR/camera performance can now be checked with no tape inside.

② [TEST No. 3] Automatic battery alarm adjustment
Used to automatically adjust the voltage level which makes the "battery" appear on the LCD display.

③ [TEST No. 4] Battery alarm check/error display
• The difference between the preset battery alarm voltage and the current supply voltage is displayed as follows.
• A past error is displayed at the right of the current battery alarm error.

④ [TEST No. 5] PASS mode
Used to adjust the tape travelling condition. The tracking is shifted by 1/4 from the center to make the tape running-related RF envelope fluctuations easier to observe.

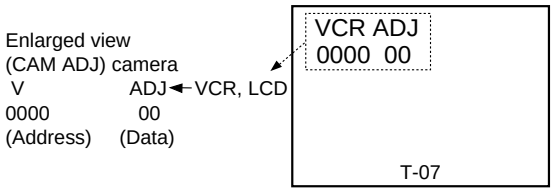
⑤ [TEST No. 6] Camera adjustment mode
Used to adjust the camera section. (For details, see Servicing the Camera Section.)

⑥ [TEST No. 7] VCR adjustment mode
Used to adjust the VCR section. (For details, see Servicing the VCR Section.)

⑦ [TEST No. 8] Automatic switching point adjustment
Used to automatically adjust the playback switching point. (For details, see Automatic Adjustment of the Playback Switching Point.)

## 6-3-2-2. Setting up the VCR section adjustment mode (camera section adjustment)

• Select adjustment items by using addresses. Rewrite the adjustment data to change the settings.
Below shown the adjustment procedures and on-screen display.




| | Procedural steps | Display ( : flashing) |
|---|---|---|
| ① | Turn up or down the flashing hexadecimal number with the FF or REW key to select the address of a desired adjustment item. (Initial address: 00H)<br>Note: The addresses change as follows. 01FE — 01FF — 0000 — 0001 — 0002 | V ADJ |
| ② | Press the PB key to read the data of the selected address. | V ADJ<br>002C A3 |
| ③ | Turn up or down the data setting with the FF or REW key. The data display starts flashing. | V ADJ<br>002C |
| ④ | Press the PB key again to write the data setting into the selected address. | V ADJ<br>002C 72 |
| ⑤ | Press the STOP key in the above step ② or ④, and the screen returns back to the step ①. | V ADJ |

When the FF or REW key is held down for 0.3 second or longer, the address selection is repeated in cycles of 100 msec. The data setting changes by ± 4 by holding the key down for 2 seconds or longer.

## 6-3-2-3. Battery shut-off voltage adjusting method

1) Supply power to the main unit, using the variable-voltage DC power supply (range of 2.5V to 5.0V).
2) Set the CAM/OFF/VCR SW to CAM to switch to the camera mode.
3) Load a recordable tape and set the main unit to CAM REC. PAUSE.
4) Set the main unit to TEST mode No. 3, and start recording.
5) Measure voltage between TL2911(+) and TL2914(GND), and adjust the supply voltage to 3.1V.
6) The adjustment is complete if "BATTERY" is displayed on the monitor screen for a second when the PLAY key of operation unit is pressed.
7) The adjustment is regarded as proper if the auto shut-off is actuated after the warning is displayed when the TEST mode is cancelled.

* In case of automatic adjustment of shut-off voltage, adjustment is impossible if voltage is above 3.1V ± 0.2V.
If the adjustment is made at 2.9V or below, the low-voltage operation may become unstable.

•Type of test modes
<Procedues>
To adjust the camera section of this machine, the remote control for servicing (RRMCG0033TASA) is used.
Press the "CONTINUE" key → "TEST SEL", this will show [T-01] on the LCD OSD, (01:flashing), and select the below TEST No. with "FF" or :REW" key and set with "PLAY" key.
Same procedures of adjustment from now on.

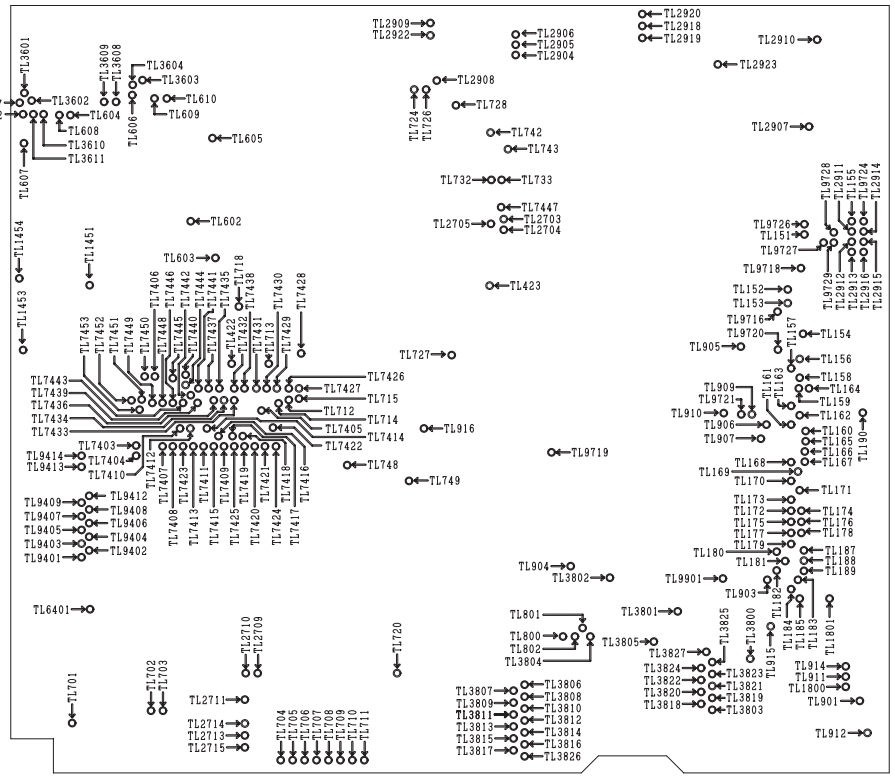
Use the SW2 thru SW9 switches on the adjustment tool to select the following test modes.

| TEST No. | Title | Contents | Sensor on/off |
|---|---|---|---|
| 1 | Sensors off | All sensors but the cassette controller switch, dew sensor and battery sensor stay off. | |
| 2 | Mechanism adjustment mode | ① Automatic SP/LP detection prohibited<br>② Different-mode detection prohibited<br>③ ATF sampling limited to center | All sensors on |
| 3 | Automatic battery sensor adjustment | Battery sensor's input voltage put in memory. | |
| 4 | Error display | Past errors appear on the counter display of the viewfinder. | All sensors on |
| | Battery adjustment error display | Battery sensor's adjustment errors are displayed at the right of the "past errors" area. | All but sensors on |
| 5 | PASS mode | Track shift mode (1/4 shift) | All sensors on |
| 6 | Camera adjustment mode | Camera adjustment mode | [VCR interrupted] |
| 7 | VCR adjustment mode | VCR adjustment mode | |
| 8 | Automatic switching point adjustment (STOP ADJ) | Play standard tape and call this mode. Switching point is automatically adjusted. | |

① When the battery adjustment mode is selected from the camera adjustment mode with a cassette with the erase protection tab, the VCR is automatically put in the REC mode.

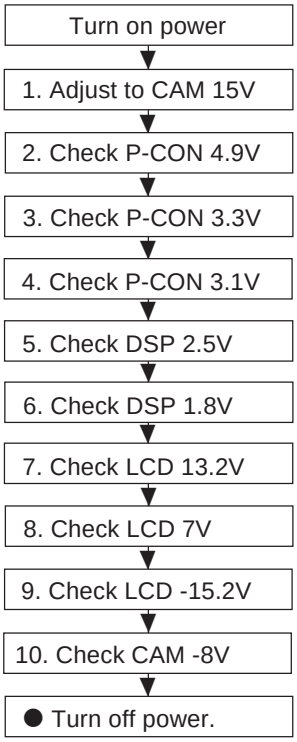
## 6-3-3. Adjusting the VCR circuit

• Test Points on the Video Circuit Board



## 6-3-3-1. Adjusting the power circuit

### a) POWER CIRCUIT ADJUSTMENT PROCEDURE


Turn on power
1. Adjust to CAM 15V
2. Check P-CON 4.9V
3. Check P-CON 3.3V
4. Check P-CON 3.1V
5. Check DSP 2.5V
6. Check DSP 1.8V
7. Check LCD 13.2V
8. Check LCD 7V
9. Check LCD -15.2V
10. Check CAM -8V
● Turn off power.

**POWER CIRCUIT ADJUSTMENT METHOD**

● Input 7V from DC Jack, and set the power switch to the camera side.

✳ Don't fail to fix the back light unit before adjusting them.

**1. Adjustment to CAM 15V**

Make an adjustment so that the digital voltmeter indicates 15V ± 0.05V.

| | |
|---|---|
| Measuring instrument | Digital voltmeter |
| Measuring terminal | TL905 |
| Adjustment address | 32h |
| Standard | 15V ± 0.05V |

**2. Checking of P-CON 4.9V**

Ascertain that the digital voltmeter indicates 4.9V ± 0.1V.

| | |
|---|---|
| Measuring instrument | Digital voltmeter |
| Measuring terminal | TL901 |
| Adjustment address | |
| Standard | 4.9V ± 0.1V |

**3. Checking of P-CON 3.3V**

Ascertain that the digital voltmeter indicates 3.3V ± 0.1V.

| | |
|---|---|
| Measuring instrument | Digital voltmeter |
| Measuring terminal | TL903 |
| Adjustment address | |
| Standard | 3.3V ± 0.1V |

**4. Checking of P-CON 3.1V**

Ascertain that the digital voltmeter indicates 3.1V ± 0.1V.

| | |
|---|---|
| Measuring instrument | Digital voltmeter |
| Measuring terminal | TL9718 |
| Adjustment address | |
| Standard | 3.1V ± 0.1V |

**5. Checking of DSP 2.5V**

Ascertain that the digital voltmeter indicates 2.5V ± 0.1V.

| | |
|---|---|
| Measuring instrument | Digital voltmeter |
| Measuring terminal | TL916 |
| Adjustment address | |
| Standard | 2.5V ± 0.1V |

**6. Checking of DSP 1.8V**

Ascertain that the digital voltmeter indicates 1.8V ± 0.1V.

| | |
|---|---|
| Measuring instrument | Digital voltmeter |
| Measuring terminal | TL910 |
| Adjustment address | |
| Standard | 1.8V ± 0.1V |

**7. Checking of LCD 13.2V**

Ascertain that the digital voltmeter indicates 13.2V ± 0.2V.

| | |
|---|---|
| Measuring instrument | Digital voltmeter |
| Measuring terminal | TL907 |
| Adjustment address | |
| Standard | 13.2V ± 0.2V |

**8. Checking of LCD 7V**

Ascertain that the digital voltmeter indicates 7V + 0.4/-0.5V.

| | |
|---|---|
| Measuring instrument | Digital voltmeter |
| Measuring terminal | TL904 |
| Adjustment address | |
| Standard | 7V + 0.4/-0.5V |

**9. Checking of LCD -15.2V**

Ascertain that the digital voltmeter indicates -15.2V ± 1V.

| | |
|---|---|
| Measuring instrument | Digital voltmeter |
| Measuring terminal | TL906 |
| Adjustment address | |
| Standard | -15.2V ± 1V |

**10. Checking of CAM -8V**

Ascertain that the digital voltmeter indicates -8V ± 0.5V.

| | |
|---|---|
| Measuring instrument | Digital voltmeter |
| Measuring terminal | TL909 |
| Adjustment address | |
| Standard | -8V ± 0.5V |

## 6-3-4. Adjustment of system controller and servo circuit

### 6-3-4-1. Adjustment of playback switching point

| | |
|---|---|
| Measuring instrument | Oscilloscope |
| Mode | Playback |
| Adjustment address | 30h |
| Tape | Alignment tape (JiGWR5-5NSP) |

**b) CHARGING CIRCUIT ADJUSTMENT PROCEDURE**

1) Play back the alignment tape (JiGWR5-5NSP)
2) Press the “CONTINUOUS PUSH” and “TEST MODE SELECTION” of adjustment remote controller to set the test mode. (At this time the numeral of “TEST01” blinks.)
3) Using the “FF” and “REW” keys, select “TEST08”, and press the playback key to set the SW-P adjustment mode.
4) When the adjustment is completed, "HSWP" is displayed and the tape is ejected. When the adjustment is not proper, "NG" is displayed in the red frame of the unit.

Only in the case when the satisfactory result was not obtained by the adjusting method described above, perform the following adjustment.

1) Connect each signal to the oscilloscope.
   1ch: SEP Y OUT ..... TL1453
   2ch: H-SW-P ..... TL7417
   GND: GND ..... TL1454
2) Play back the alignment tape (JiGWR5-5NSP)
3) Press the “CONTINUOUS PUSH” and “VCR ADJUSTMENT” of adjustment remote controller to set the VCR adjustment mode.
4) Select the address 30h, set the sync slope of oscilloscope to (–), adjust the data with “REW” and “FF” so that the interval between the trigger point and the V sync signal is set to 6H, and fix the data with the “PLAY” button. (See Figure 6.1.1.)
5) Then, set the sync slope to (+), and ascertain that the interval between the trigger point and the V sync signal has been set to 6H. (See Figure 6.1.2.)
6) Keep the STOP key pressed for about 3 seconds to exit from the adjustment mode.

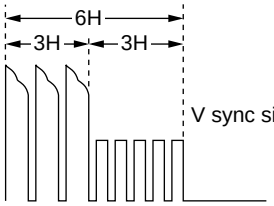



**Figure 6.1.1**

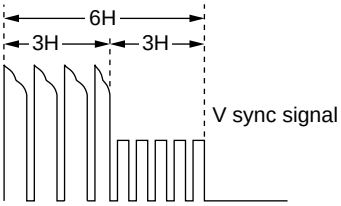



**Figure 6.1.2**

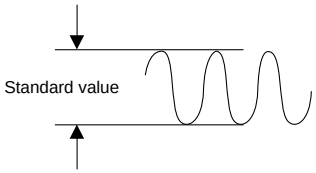
## 6-3-5. Y/C circuit adjustment method

1. Y recording current adjustment

· Hi-8model

| | Mode | Address | Measuring point | Adjustment standard | Measuring instrument |
|---|---|---|---|---|---|
| REC Y current adjustment (Hi-8) | VCR STOP | 3F | TL9413(Sig) TL9414(Gnd) | ME 130±5mVP-P | Oscilloscope |
| | | 40 | | MP 95±5mVP-P | |
| REC Y current adjustment (Nor 8) | | 41 | | ME 125±5mVP-P | |
| | | 42 | | MP 120±5mVP-P | |

(1) Enter the VCR STOP mode.
(2) Select the above applicable address with the adjustment remote control.
(3) Measurement signal is output to TL9413.
(4) Adjust the amplitude so as to get the adjustment standard value at TL9413(Sig) and TL9414(Gnd).

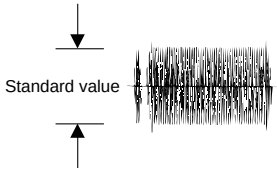



2. C recording current adjustment

· Hi-8model

| | Mode | Address | Measuring point | Adjustment standard | Measuring instrument |
|---|---|---|---|---|---|
| REC C current adjustment (Hi-8) | VCR STOP | 43 | TL9413 (Sig) TL9414 (Gnd) | ME 115±5mVP-P | Oscilloscope |
| | | 44 | | MP 105±5mVP-P | |
| REC C current adjustment (Nor 8) | | 45 | | ME 135±5mVP-P | |
| | | 46 | | MP 120±5mVP-P | |

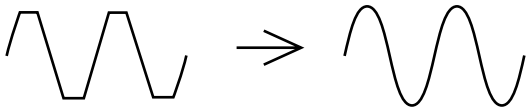
(1) Enter the VCR STOP mode.
(2) Select the above applicable address with the adjustment remote control.
(3) Measurement signal is output to TL9413.
(4) Adjust the amplitude so as to get the adjustment standard value at TL9413(Sig) and TL9414(Gnd).



## 6-3-6. Adjustment of audio circuit

**1. Adjustment of filter f0**

| | |
|---|---|
| Measuring instrument | Oscilloscope |
| Mode | PB |
| Input signal (tape) | JiGWR5-5NSP |
| Measuring terminal | TL605/AUDIO.OUT |
| Adjustment address | 33 |
| Set value | Clear the waveform |



1) Set the alignment tape (JiGWR5-5NSP).
2) Using the adjustment remote controller (RRMCG0033TASA), set the VCR adjustment mode, and set the address “33” with the operation switch (FF/REWIND key).
3) Play back the standard tape.
4) Using the operation switch (FF/REWIND key), make an adjustment so that the most clear playback waveform is obtained on TL605.
5) Press the operation switch (PLAYBACK key) to write the data.
6) Press the operation switch (STOP key) to exit from the address “33”.
   (The address “33” blinks.)

**Audio Check**

**Checking of self-recording/playback**

| | |
|---|---|
| Measuring instrument | Valve Voltmeter (oscilloscope) |
| Mode | REC →PB |
| Input signal (tape) | 400 Hz, -8 dBs (872 mVp-p) |
| Measuring terminal | Audio IN/OUT |
| Adjustment address | — |
| Set value | -8 dBs ± 4 dBs (580 to 1370 mVp-p) |

1) Input the audio signal (400Hz, -8dBs) into the Audio line IN/OUT terminal, and record.
2) Connect the valve voltmeter (oscilloscope) to the Audio line IN/OUT terminal.
3) Play back the record, and ascertain that the output waveform level is -8 dBs ± 4 dBs (580 to 1370 mVp-p on the oscilloscope).
4) If there is any deviation from the specified value, perform adjustment again as stated in items 1) above, and check again the self-recording/playback level.

## 6-3-7. Adjustment of LCD display circuit

Adjustment procedures and connections are the same as with the VCR section. (Refer to item 6-3-3)

**1. Inverter input Voltage Setting**

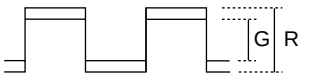
| VCR ADJ | | |
|---|---|---|
| Address | Data(3 type) | Data(3.5 type) |
| 50 | 8F | 95 |
| 51 | 8A | 90 |
| 52 | 6F | 74 |

**2. Dac full-Scalle adjustment**

| | |
|---|---|
| Measuring point | TL1801 (G-OUT) |
| Address | 039 |
| Mode | VCR |
| Adjusting method | 1) Set the data of address 082 changed to 80, address 0A2 changed to 00, address 0A5 changed to 80.<br>2) Connect TL3804 to P-CON 3.1V.<br>3) Connect the Digital voltmeter to TL801 and adjust the DC volt.<br>4) Set the data of address 082 changed to 40, address 0A2 28. (Restore) |
| Adjustment standard | 0.78V ± 10mV |
| Remarks | ———————— |

**3. R-W/B adjustment**

| | |
|---|---|
| Measuring point | TL3814 (G-OUT) TL3813 (R-OUT) |
| Address | 090 |
| Mode | VCR |
| Adjusting method | 1) Set the data of address 082 at the address 80.<br>2) TL3814 (G-OUT): Oscilloscope CH1<br>TL3813 (R-OUT): Oscilloscope CH2<br>3) Adjust P-P of TL3813 becomes bigger 0.15V than TL3814.<br>4) Set the data of address 082 at the address 40. (Restore) |
| Adjustment standard | ±0.1Vp-p |
| Remarks | ———————— |



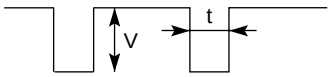

**4. B-W/B adjustment**

| | |
|---|---|
| Measuring point | TL3814 (G-OUT) TL3815(B-OUT) |
| Address | 092 |
| Mode | VCR |
| Adjusting method | 1) Set the data of address 082 at the address 80.<br>2) TL3814 (G-OUT): Oscilloscope CH1<br>TL3815 (B-OUT): Oscilloscope CH2<br>3) Adjust P-P of TL3815 become bigger 0.1V than TL3814.<br>4) Set the data of address 082 at the address 40. (Restore) |
| Adjustment standard | ±0.1Vp-p |
| Remarks | ———————— |

**5. VCO adjustment**

| | |
|---|---|
| Measuring point | TL3802 |
| Address | 03E |
| Mode | VCR |
| Adjusting method | 1) Connect TL3803 to GND.<br>2) Connect the frequency counter to TL3802, and adjust the frequency. |
| Adjustment standard | 15.734kHz ± 100Hz |
| Remarks | ———————— |

**6. H-position adjustment**

| | |
|---|---|
| Measuring point | TL3802 |
| Address | 03B |
| Mode | VCR |
| Adjusting method | 1) Connect the oscilloscope to TL3802, and adjust the pulse width.   |
| Adjustment standard | 3 type: 2.8µsec ±0.15µsec (VL-AH150), 3.5 type: 3.7µsec ±0.15µsec (VL-AH160) |
| Remarks | ———————— |

**7. COMMON PULSE adjustment**

| | |
|---|---|
| Measuring point | TL1801 |
| Address | 037 |
| Mode | VCR |
| Adjusting method | 1) Set the data of address 0A5 at the address 80.<br>2) Connect TL1800 to GND.<br>3) Connect the Digital voltmeter to TL1801, and adjust the DC Volt. |
| Adjustment standard | 6.85V ± 50mV |
| Remarks | ———————— |

**8. COM-BIAS adjustment**

| | |
|---|---|
| Measuring point | LCD panel display surface |
| Address | 03C |
| Mode | VCR |
| Adjusting method | 1) Set data of address 0A5 at the address 80 and address 082 at the address A9.<br>2) Set the illuminometer (TOPCON IM-3) on the LCD panel surface (do not allow entry of external light).<br>3) Connect the illuminometer to the oscilloscope.<br>4) Make an adjustment so as to minimize the ripple of output waveform.<br>Response time: 0.6 sec<br>5) Adjust again if longitudinal stripe appears evidently.<br>6) Set data of address 082 at the address 40. (Restore)<br>* Or set to the point where the black is settled deepest with the grey scale signal. |
| Adjustment standard | Minimum |
| Remarks | Make an adjustment after aging for 5 minutes or more. |

**9. W/B adjustment**

| | |
|---|---|
| Measuring point | LCD panel display surface |
| Address | 090, 092 |
| Mode | VCR |
| Adjusting method | 1) Set data of address 0A5 at the address 80, and address 082 at the address A9.<br>2) Adjust so as to get the same white screen as that of standard monitor. (Adjust again, visually checking as stated in item 3. 4.)<br>3) Set data of address 082 at the address 40. (Restore) |
| Adjustment standard | Standard monitor |
| Remarks | Make an adjustment after aging for 5 minutes or more. |

# 6-4. ADJUSTMENT OF CAMERA SECTION

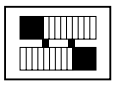
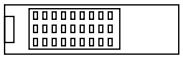
## 6-4-1. Servicing of camera section

### (1) Object, measuring instrument and jigs necessary for camera section servicing

| | | |
|---|---|---|
| • Gray scale chart<br>• Vectorscope<br>• Extension cable<br>• Oscilloscope<br>• Video output cable | • Color bar chart<br>• Color temperature conversion filter HOYA "LB-165"<br>• Digital voltmeter | • Halogen light (2 pcs.)<br>• Color video monitor<br>• AC adapter<br>• Service Remote Control |

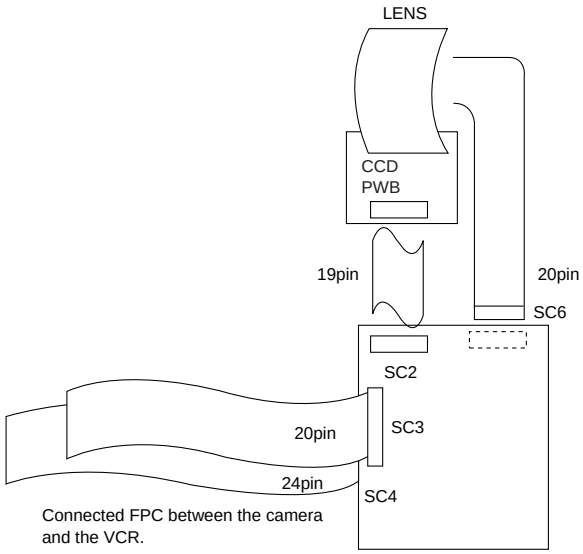
Configuration

**<Note: The entries of list>** 1. Name 2. Part No. 3. Code

| | | | |
|---|---|---|---|
|  <br>1. Gray Scale Chart (390 x 520 mm)<br>2. JiGCHART-1<br>3. CP | <br>1. Color Bar Chart (240 x 320 mm)<br>2. JiGCHART-4<br>3. DA | 1. Color Temperature Conversion Filter<br>2. JiGHOYA-LB165<br>3. BN |  <br>1. Service Remote Control<br>2. RRMCG0033TASA<br>3. BT |

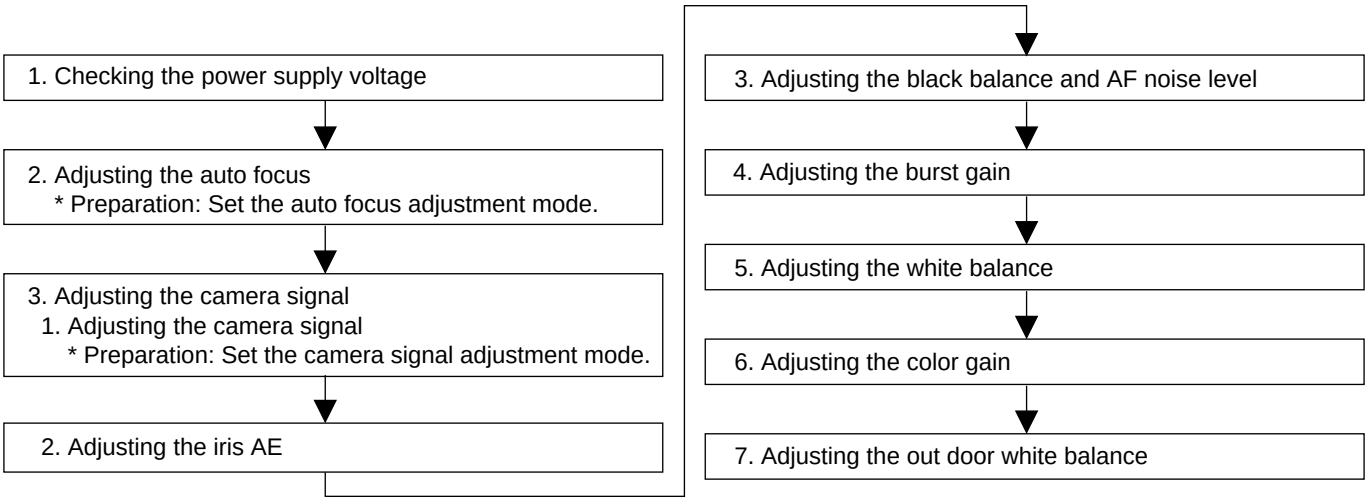
**Note:**
1. Color temperature conversion filter may be obtained from HOYA Optics in your local market.
2. N: Indicates the new jigs.

**• Connections for Camera Section Servicing**




## 6-4-2. Adjustment procedures

This adjusting procedure covers all the steps for conducting the adjustments all the way. There are some steps that may be skipped, depending on the specific needs for servicing and adjustment.


1. Checking the power supply voltage
2. Adjusting the auto focus
* Preparation: Set the auto focus adjustment mode.
3. Adjusting the camera signal
1. Adjusting the camera signal
* Preparation: Set the camera signal adjustment mode.
2. Adjusting the iris AE
3. Adjusting the black balance and AF noise level
4. Adjusting the burst gain
5. Adjusting the white balance
6. Adjusting the color gain
7. Adjusting the out door white balance

## 6-4-2-1. Checking the power supply voltage

- Measuring terminal:
  - P-CON 4.9V
  - P-CON 3.1V
  - CAM 15V
  - CAM -8V
  - LENS 5.7V
- Measuring instrument: Digital voltmeter

## 6-4-2-2. Auto focus adjustment

- **Basic iris adjustment**

| | |
|---|---|
| Measuring instrument | None |
| Subject | — |
| Tape | — |
| Test point | None |
| Adjustment address | 71 |
| Adjustment level | 09, 0A, 0B |

| DATA | Adjustment |
|---|---|
| 09 | Hall offset |
| 0A | Iris offset |
| 0B | Iris close |

1) Set up the auto focus adjustment mode. (Write 01 to the address 70)
2) Write the adjustment data 09, 0A and 0B one after the other to the address 71, the adjustment are as above.

- Lens adjustment

| | |
|---|---|
| Measuring instrument | None |
| Subject | More than 50 m away |
| Tape | — |
| Test point | None |
| Adjustment address | 71 |
| Adjustment level | 12, 06, 08, 0D |

| DATA | Adjustment |
|---|---|
| 12 | Optical wide-end adjustment |
| 06 | Wide-end focus ∞ position adjustment |
| 08 | Tele-end focus ∞ position adjustment |
| 0D | Zoom tracking adjustment |

1) Set up the auto focus adjustment mode.
   (This is unnecessary after the above basic iris adjustment has been made.)
2) Write the adjustment data 12, 06, 08 and 0D one after the other to the address 71. The adjustments are as above.

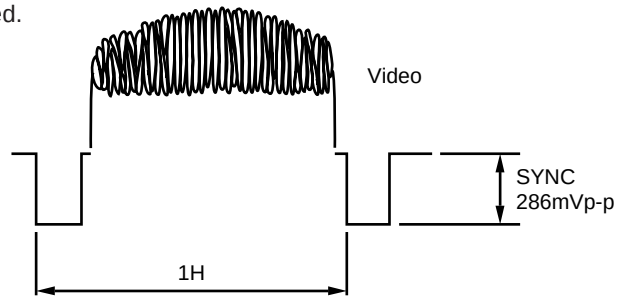
**Write FF to the address 70 to exit the auto focus adjustment mode.**

## 6-4-2-3. Adjustment of Camera signal

- Before starting these adjustment, auto focus adjustment must be finished.
- Set up the camera signal adjustment mode (Write 00 to the address 70)

1. Sync level adjustment

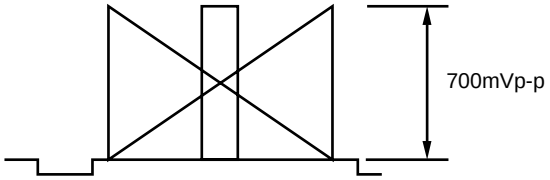
| | |
|---|---|
| Measuring instrument | Oscilloscope |
| Subject | Anything |
| Tape | — |
| Test point | VIDEO OUT (Terminated in 75Ω) |
| Adjustment address | 74 |
| Adjustment level | 286mVp-p |




1) Connect the oscilloscope to the VIDEO-OUT. Adjust the sync level to 286mVp-p.

2. Iris AE adjustment

| | |
|---|---|
| Measuring instrument | Oscilloscope |
| Subject | Gray scale |
| Tape | — |
| Test point | VIDEO-OUT |
| Adjustment address | 9C |
| Adjustment level | 700mVp-p |




1) Shoot the gray scale in the standard way. Observe the VIDEO-OUT signal on the oscilloscope screen and rewrite the data of address 9C to get an amplitude of 700mVp-p as shown above.

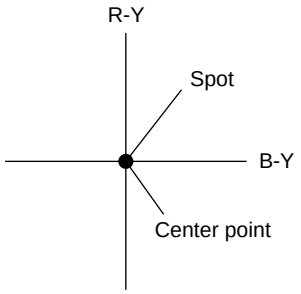
3. Black balance , AF noise level adjustment

| | |
|---|---|
| Measuring instrument | None |
| Subject | Anything |
| Tape | — |
| Test point | None |
| Adjustment address | 71 |
| Adjustment level | 01 |

1) Write the data 01 to the address 71.
   The following adjustments are automatically carried on ; ① Black balance adjustment
   ② AF noise level adjustment
   at AGC Gain Min , AGC Gain Max and Gain up.

4. White balance adjustment

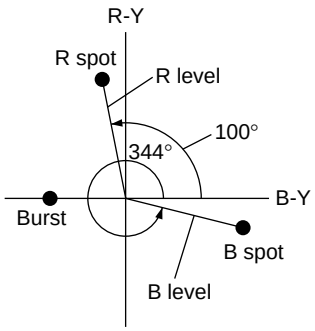
| Measuring instrument | Vector scope |
|---|---|
| Subject | Gray scale |
| Tape | — |
| Test point | VIDEO OUT (Terminated in 75 Ω) |
| Adjustment address | R-W/B 00, B-W/B 02 |
| Adjustment level | R-W/B 0 % ± 3 %<br>B-W/B 0 % ± 3 % |




1) Adjust the spot to the center of vector scope (R-Y : 0%, B-Y : 0%) using address 00 and 02.

5. Color gain adjustment

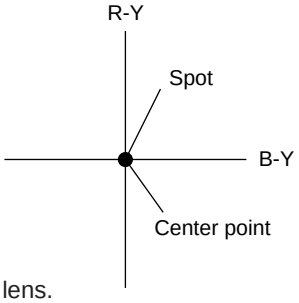
| Measuring instrument | Vector scope |
|---|---|
| Subject | Color bar chart |
| Tape | — |
| Test point | VIDEO OUT (Terminated in 75 Ω) |
| Adjustment address | R GAIN 1C4<br>B GAIN 1C2<br>R MAT 1C0<br>B MAT 1BE |
| Adjustment level | R GAIN; Burst ratio 1.2 ± 0.1<br>B GAIN; Burst ratio 1.0 ± 0.1<br>R MAT; 100 ± 2°<br>B MAT; 344 ± 2° |




1) Using the address 1C4, adjust the R level to a burst ratio of 1.2. With the address 1C2, adjust the B level to a burst ratio of 1.0.
2) Using the address 1C0, adjust the R phase to 100°. With the address 1BE, adjust the B phase to 344°.
3) Repeat the above steps 1) and 2).

6. Out door white balance adjustment

| Measuring instrument | Vector scope |
|---|---|
| Subject | Gray scale |
| Tape | — |
| Test point | VIDEO OUT (Terminated in 75 Ω) |
| Adjustment address | R-OUT DOOR 6C<br>B-OUT DOOR 6E |
| Adjustment level | R-OUT DOOR; 0 ± 3 %<br>B-OUT DOOR; 0 ± 3 % |



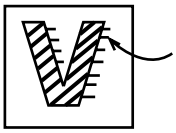

1) Attach the color temperature conversion filter (JiGHOYA-LB165) to the front of the lens.
2) Using the addresses R-OUT DOOR 6C and B-OUT DOOR 6E, adjust the spot to the center.
3) Take off the color temperature conversion filter.

**When you have finished, write FF to the adress 70 to exit camera signal adjustment mode.**

# 6-5. TROUBLE SHOOTING

## 6-5-1. Classification of troubles

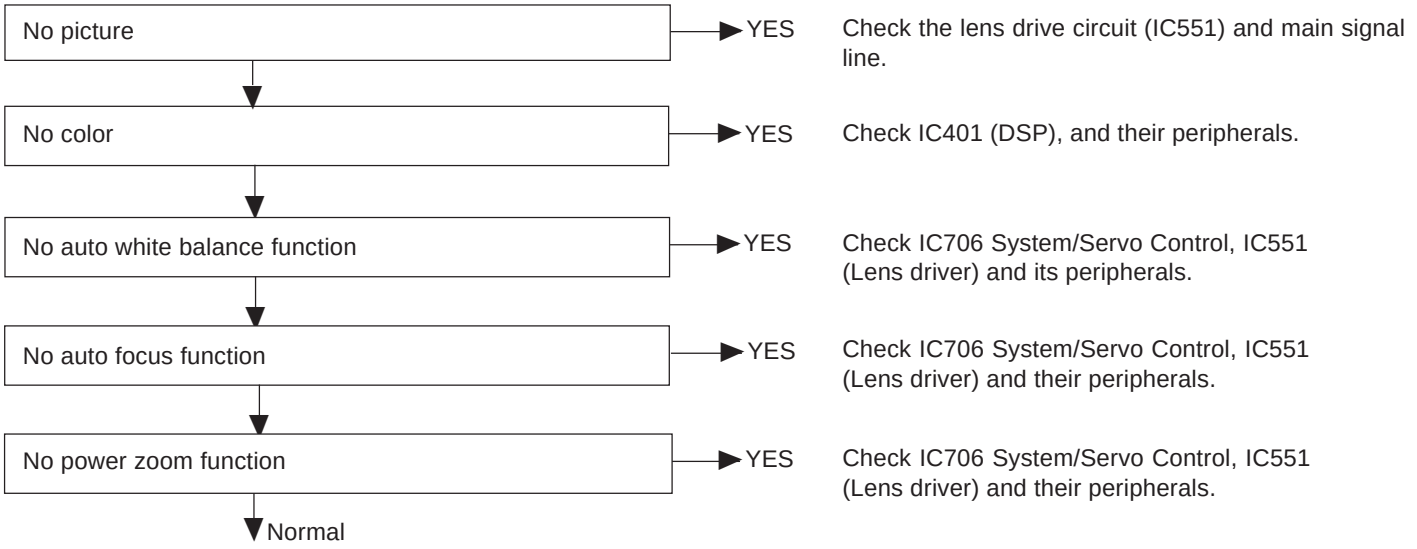
| | | |
|---|---|---|
| No function at all | YES | Check the Power circuit and system control circuit. |
| No tape ejection | YES | Check the system control and loading motor circuit. |
| No LCD light-up | YES | Check the inverter transformer and power circuit. |
| No picture in EE mode | YES | * Check the camera section and Y/C circuit and LCD circuit. |
| No picture playback | YES | Check the Y/C circuit and head amplifier circuit. |
| No video recording | YES | Check the Y/C circuit and head amplifier circuit. |
| Streaking at self-recording/playback | YES | Check the Y/C circuit and head amplifier circuit. |



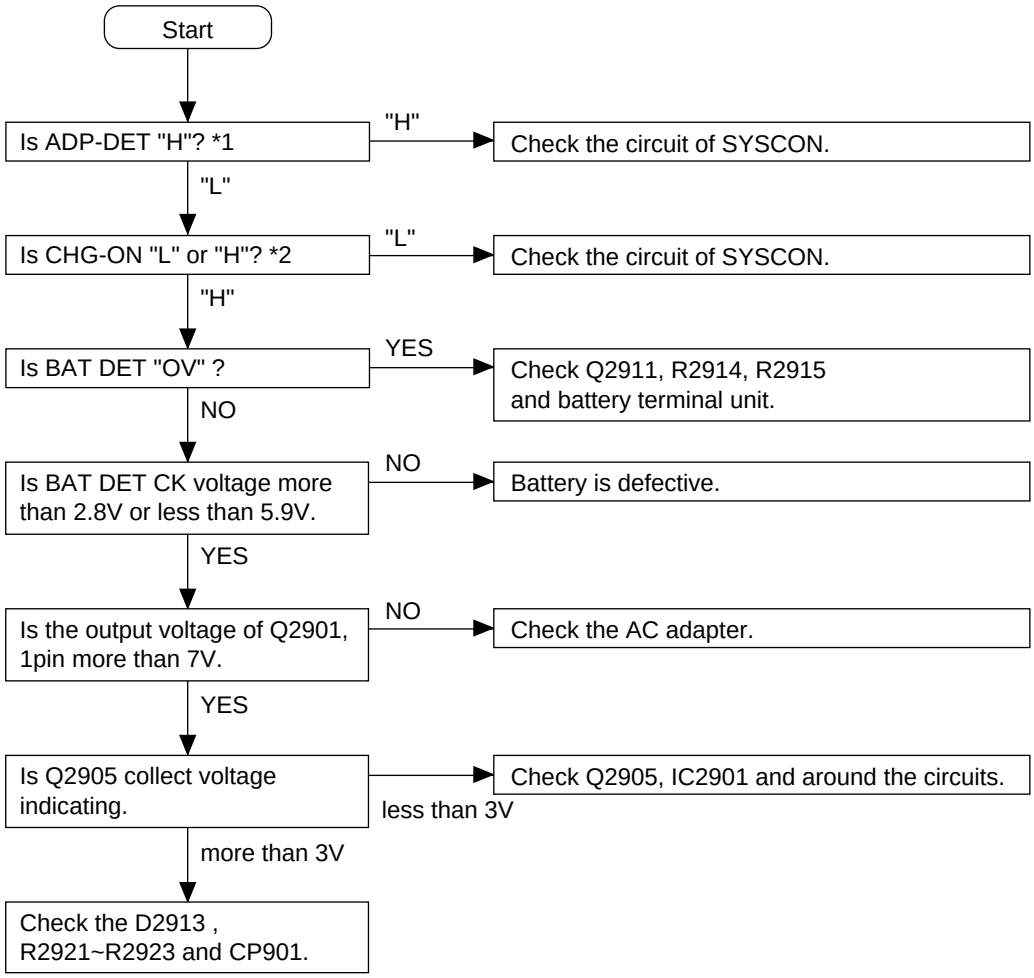

| | | |
|---|---|---|
| Noises at regular intervals in playback | YES | Check the ATF circuit. |
| No recorded characters on screen | YES | Check the LCD circuit and character generator (IC705). |
| No color in EE mode | YES | * Check the camera section and Y/C circuit. |
| No color in playback | YES | Check the Y/C circuit and head amplifier circuit. |
| No color in recording | YES | Check the Y/C circuit and head amplifier circuit. |
| No sound | YES | Check the audio circuit. |
| Error message (e.g. E007) | YES | Check the system controller and CAP MOTOR DRIVER circuit. |

Normal

## 6-5-2. Troubleshooting for the camera section

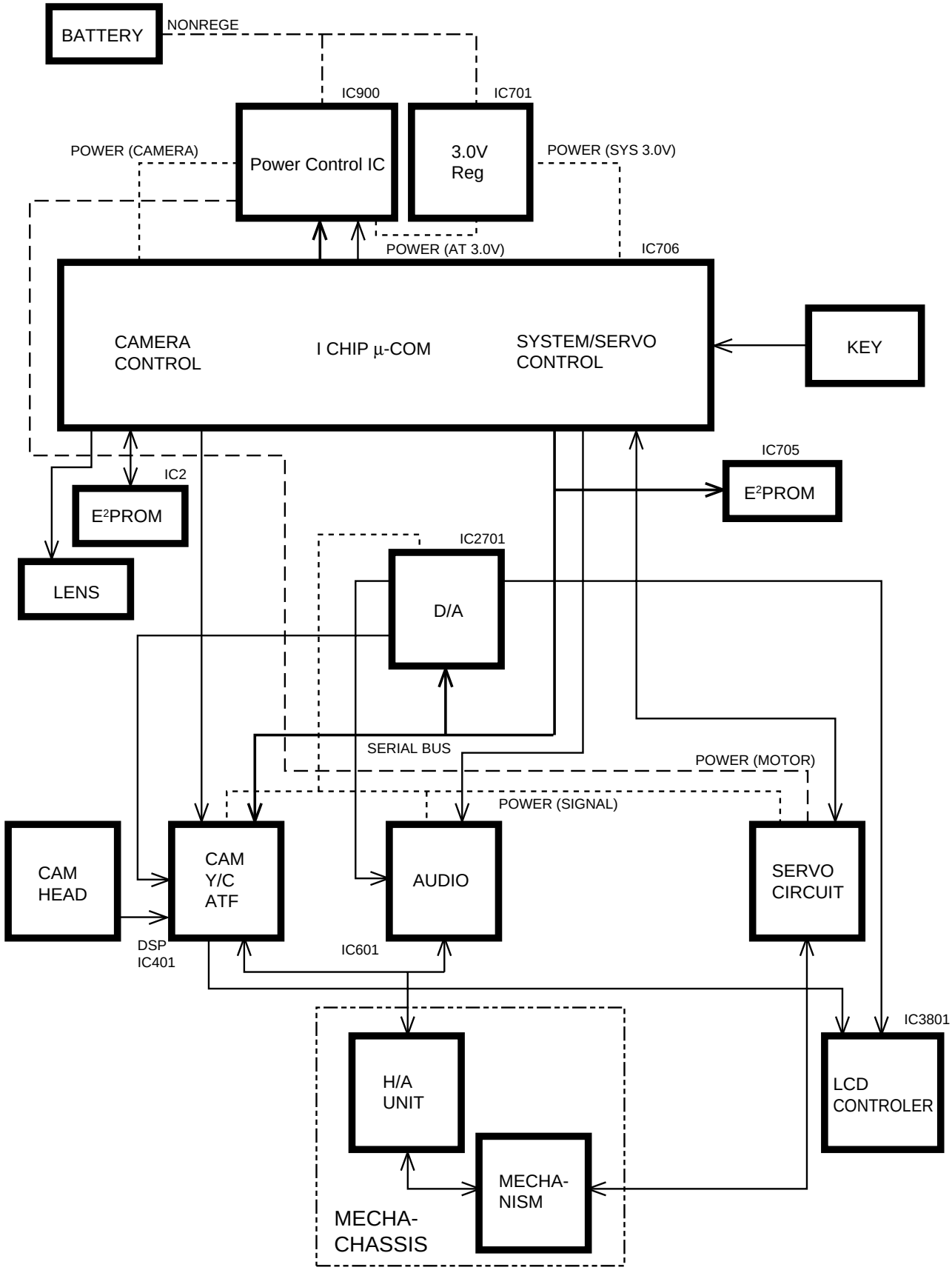

No picture
YES
Check the lens drive circuit (IC551) and main signal line.
No color
YES
Check IC401 (DSP), and their peripherals.
No auto white balance function
YES
Check IC706 System/Servo Control, IC551 (Lens driver) and its peripherals.
No auto focus function
YES
Check IC706 System/Servo Control, IC551 (Lens driver) and their peripherals.
No power zoom function
YES
Check IC706 System/Servo Control, IC551 (Lens driver) and their peripherals.
Normal

## 6-5-3. Charging mode troubles



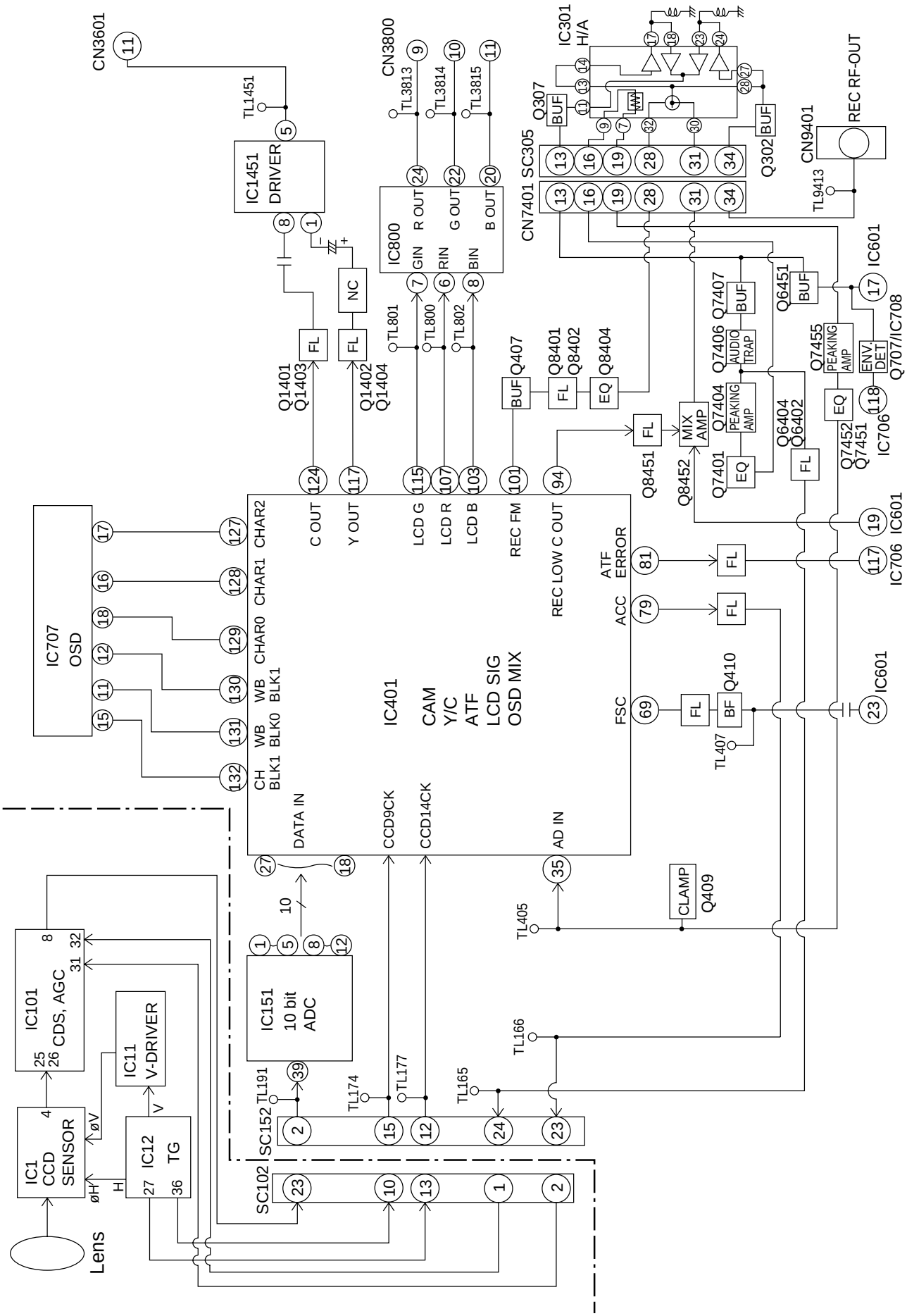

*1: Inputting DC power and set the ADP DET "L".
*2: Inputting charging mode as CHG ON "H".

# 7. SYSTEM BLOCK DIAGRAMS

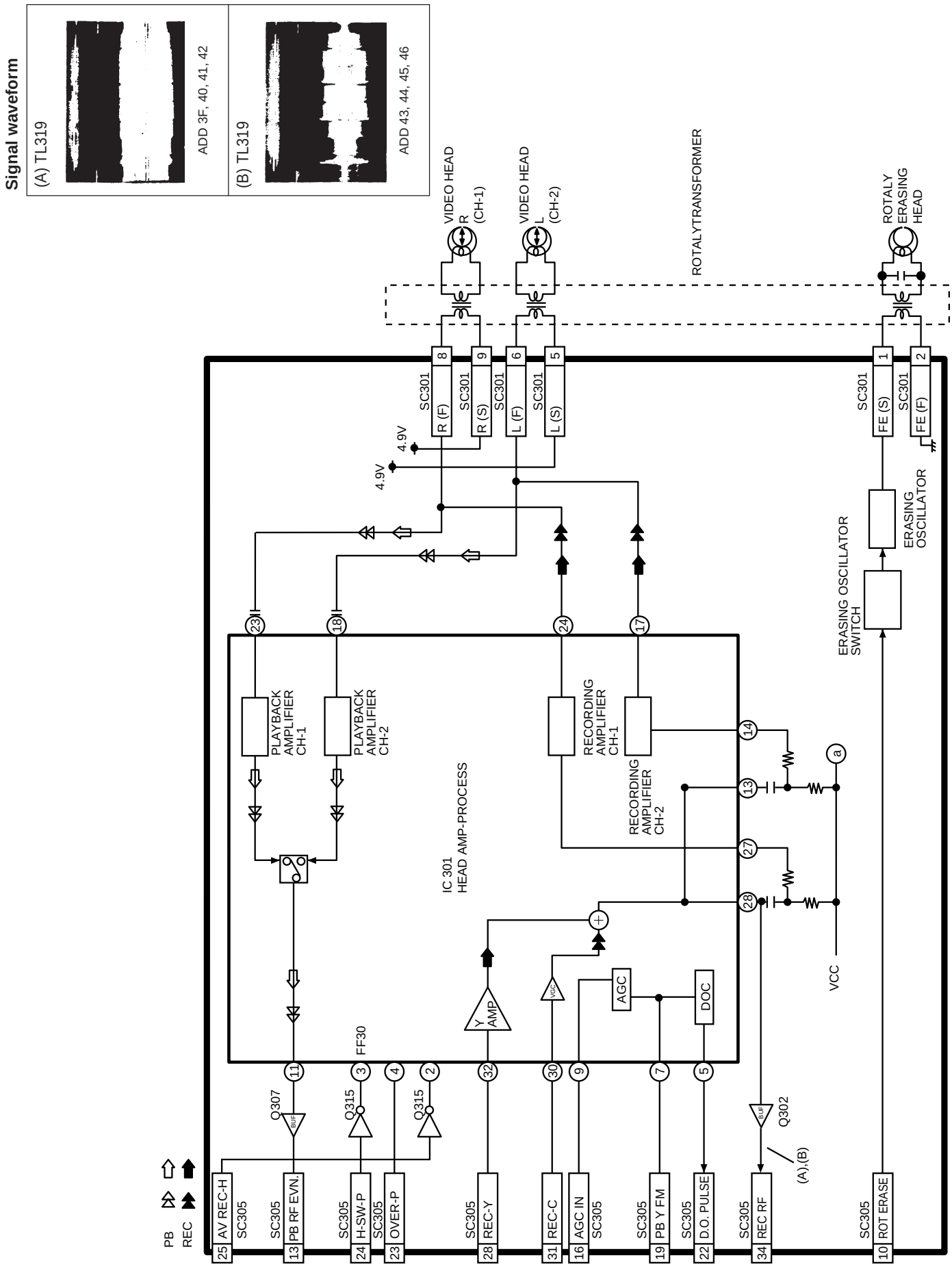



* On this model, all the circuits of the VCR and camera sections are controlled by IC706.
  1) IC401 are controlled with the serial data from IC706.
  2) IC705 is a memory that serves to store the adjustment data of the VCR section.
  3) IC2 is a memory that serves to store the adjustment data of the camera section.
  4) The other circuits and ICs are under the L/H level or the PWM control.

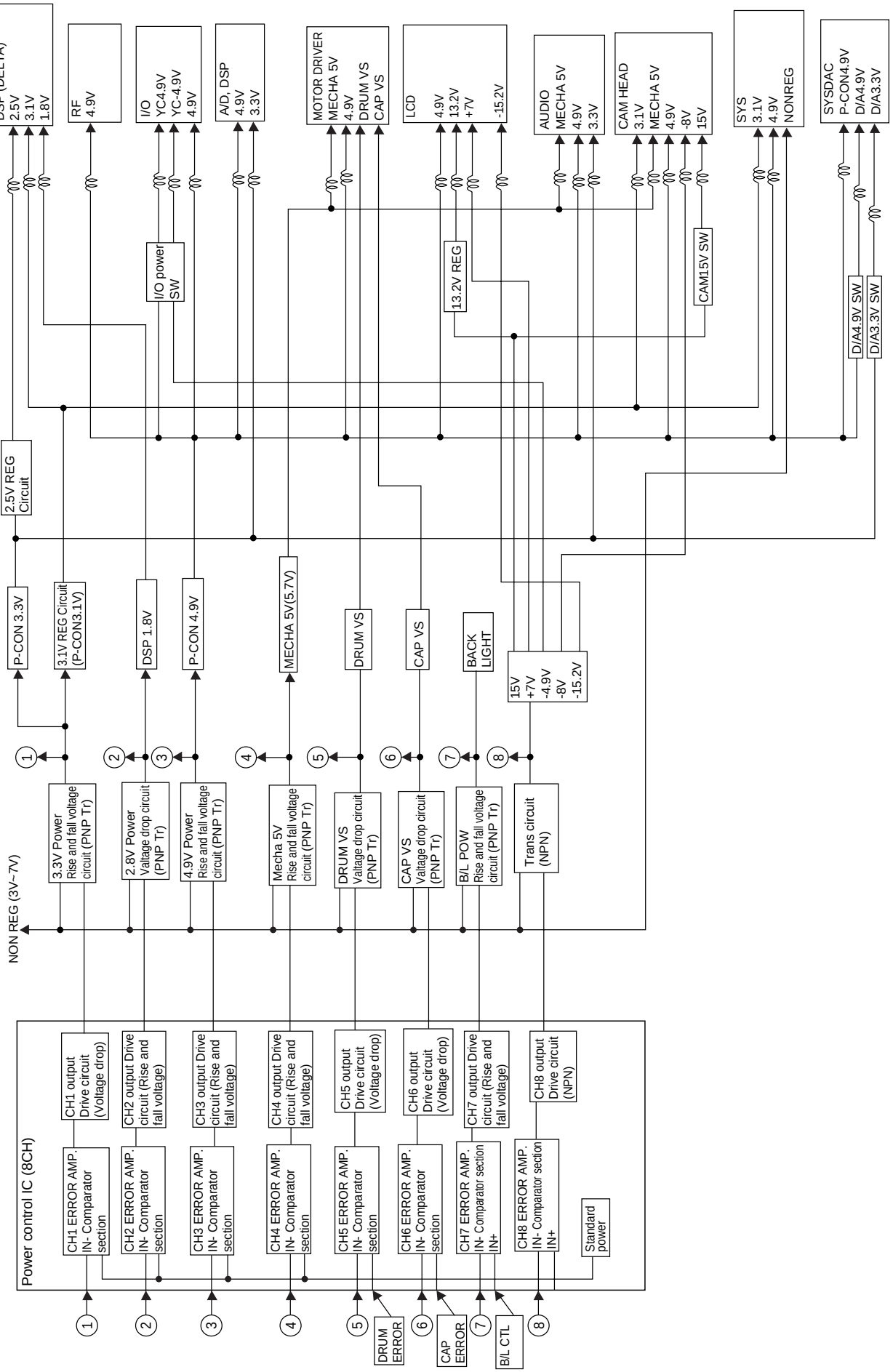
## 7-1. VIDEO SIGNAL BLOCK DIAGRAM



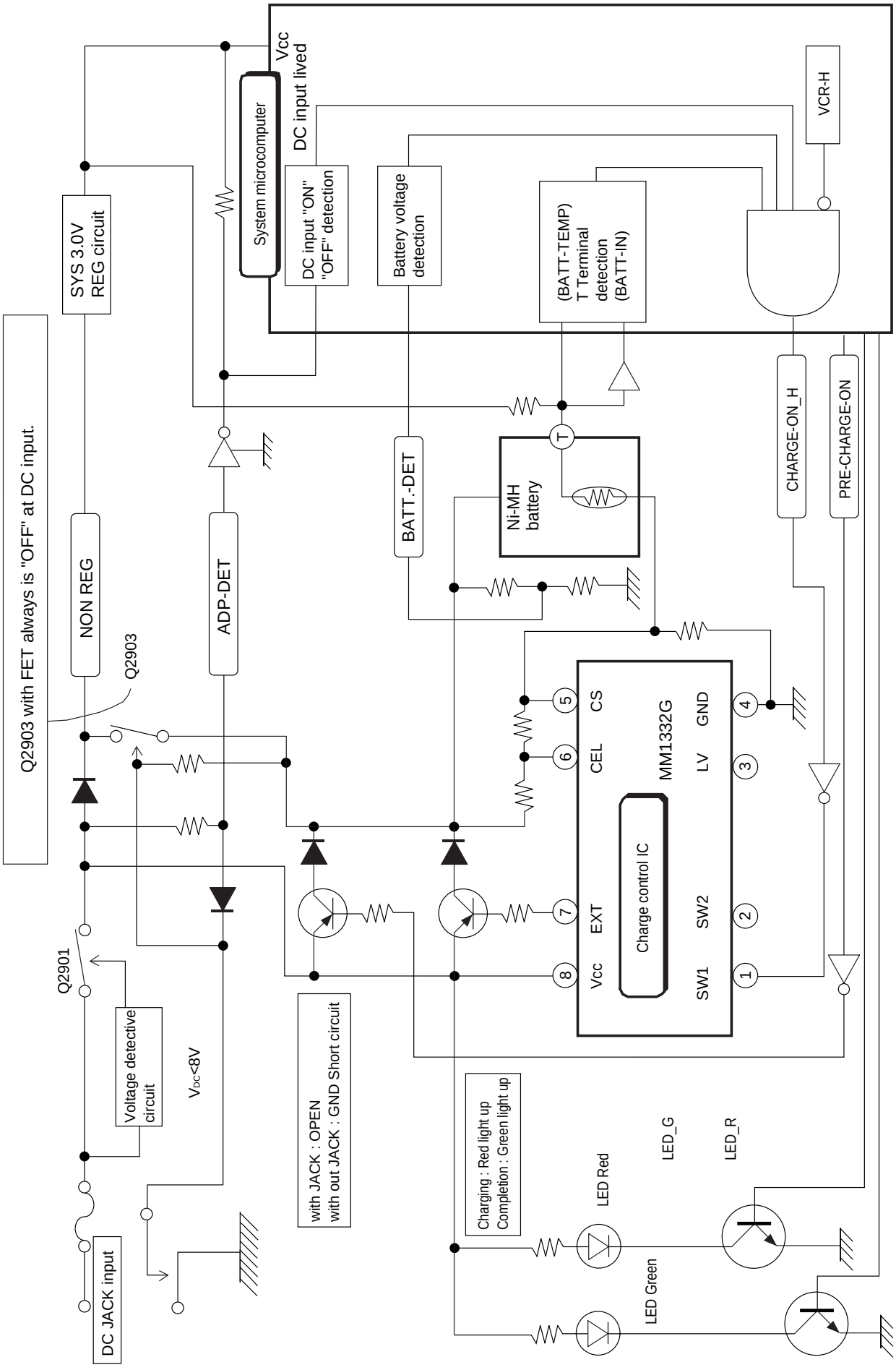
## 7-2. HEAD AMP BLOCK DIAGRAM



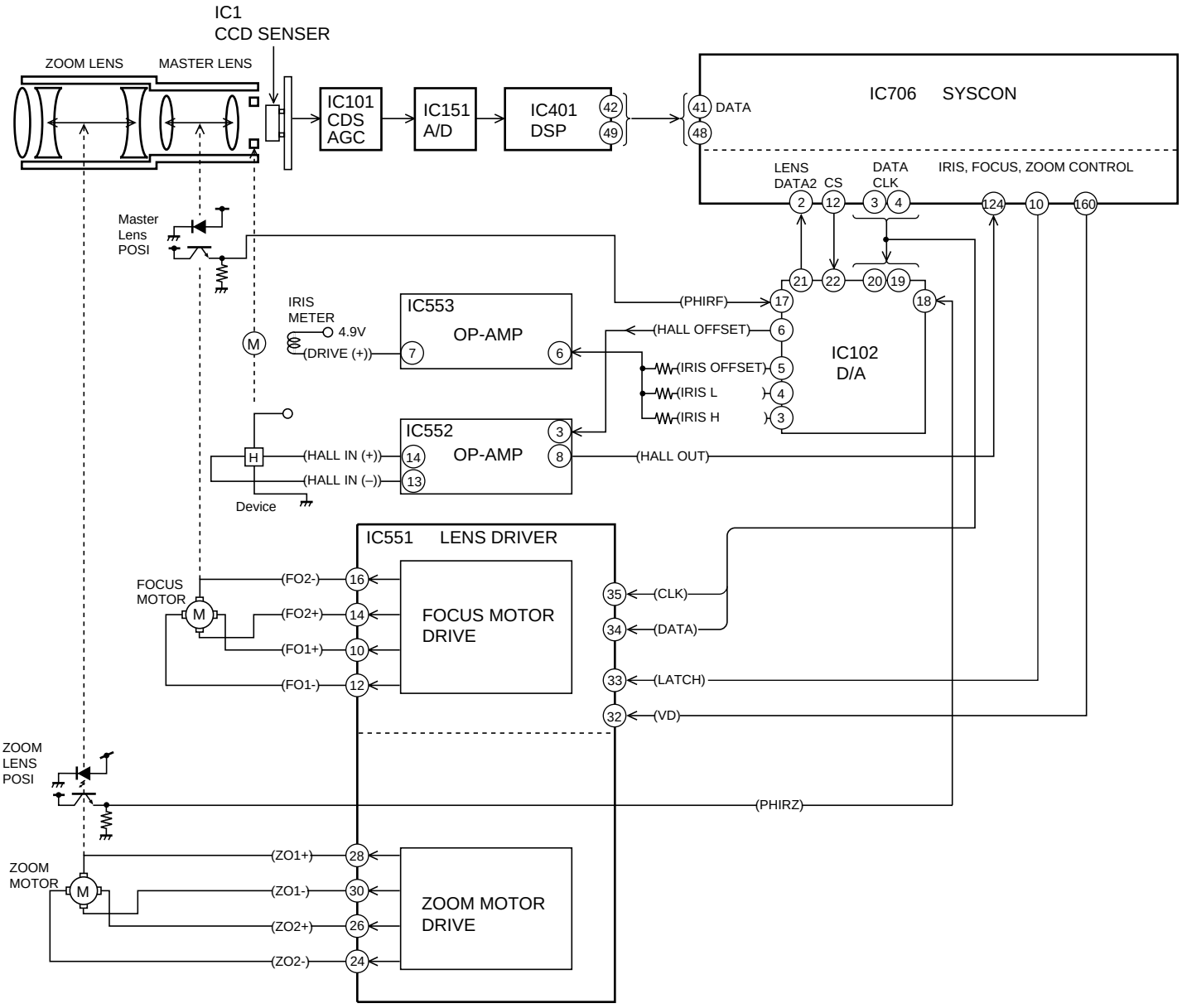
## 7-3. POWER SYSTEM BLOCK DIAGRAM



## 7-4. MAIN BATTERY CIRCUIT SECTION BLOCK DIAGRAM

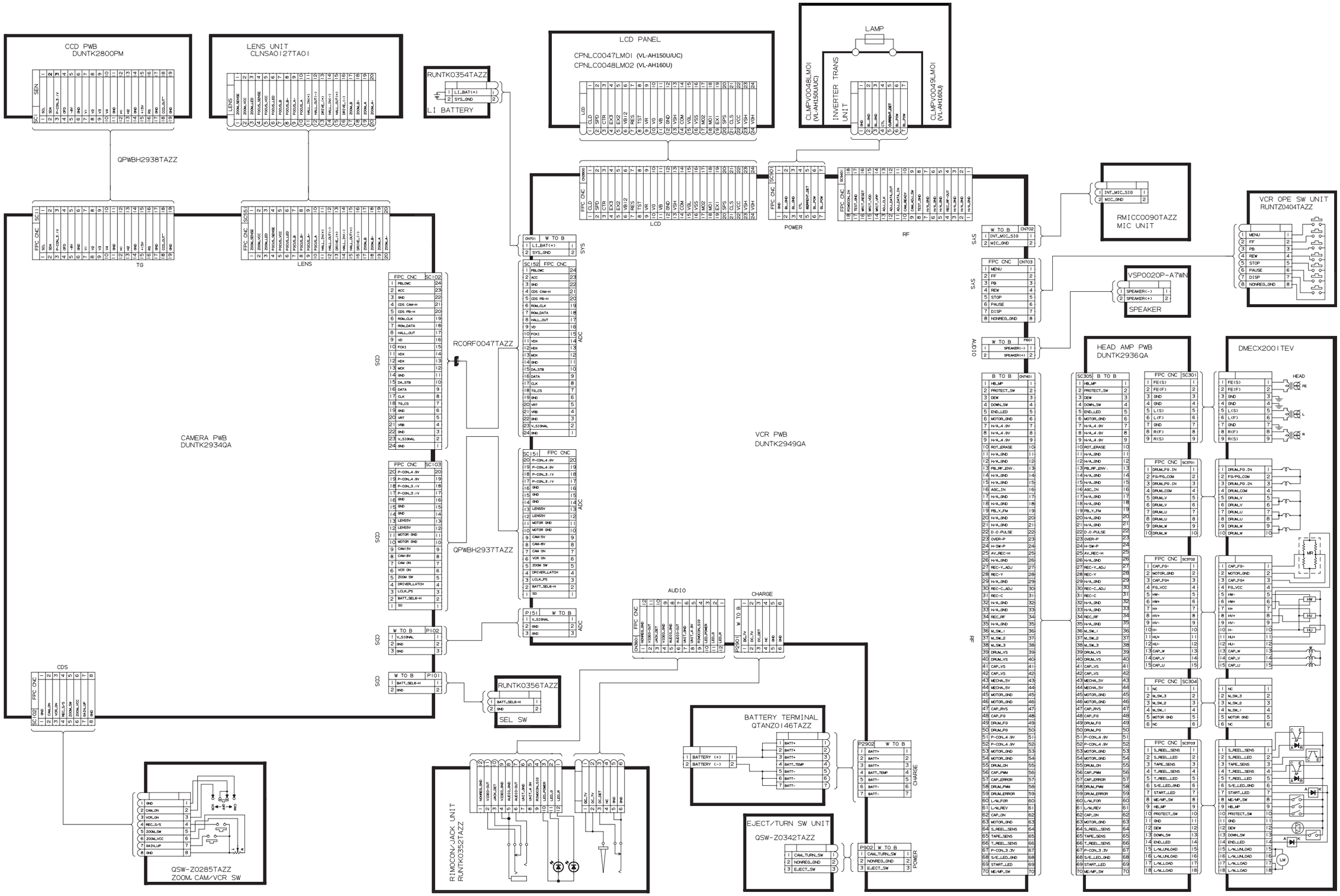


## 7-5. LENS DRIVE BLOCK DIAGRAM

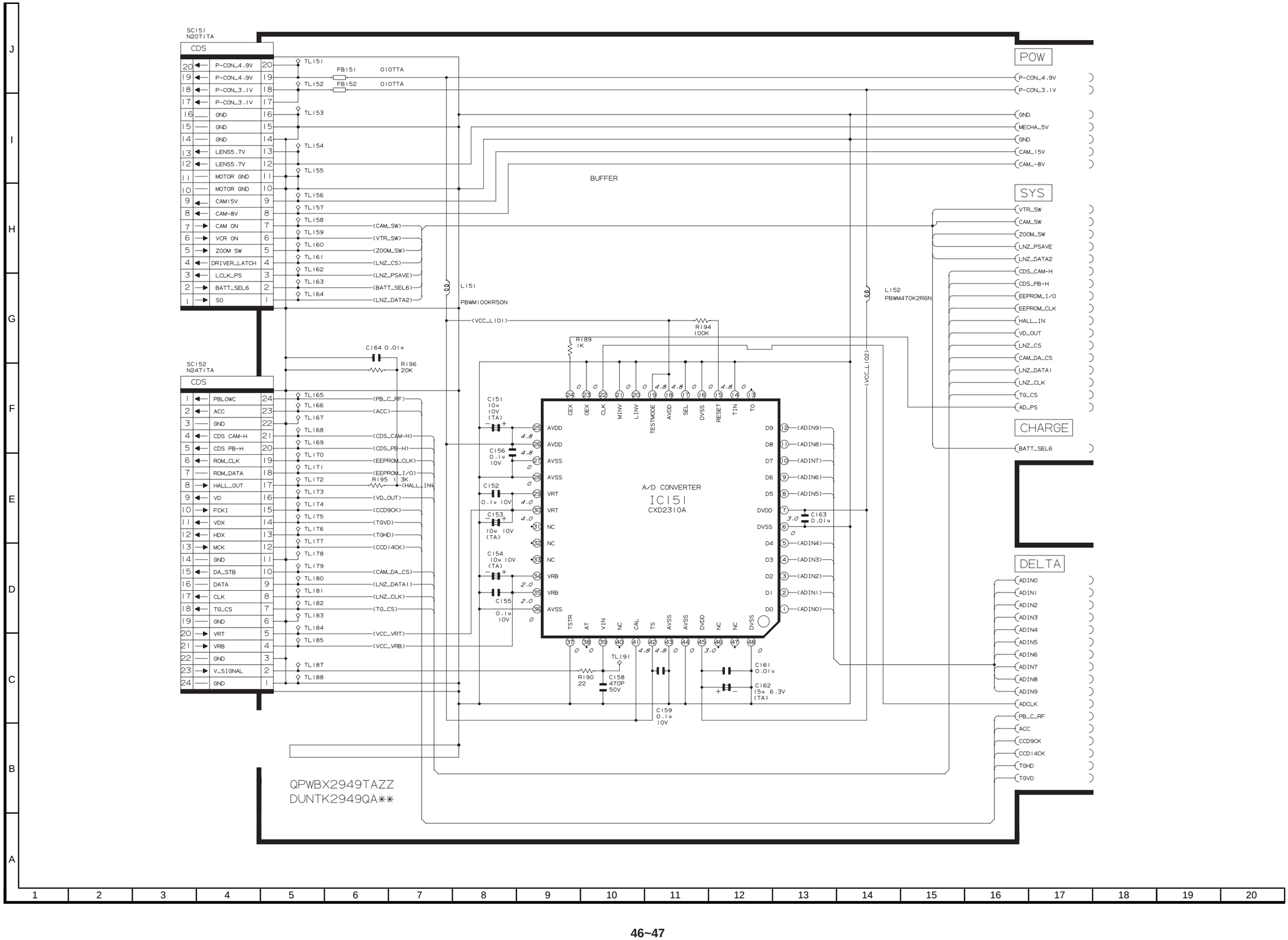


# - M E M O -

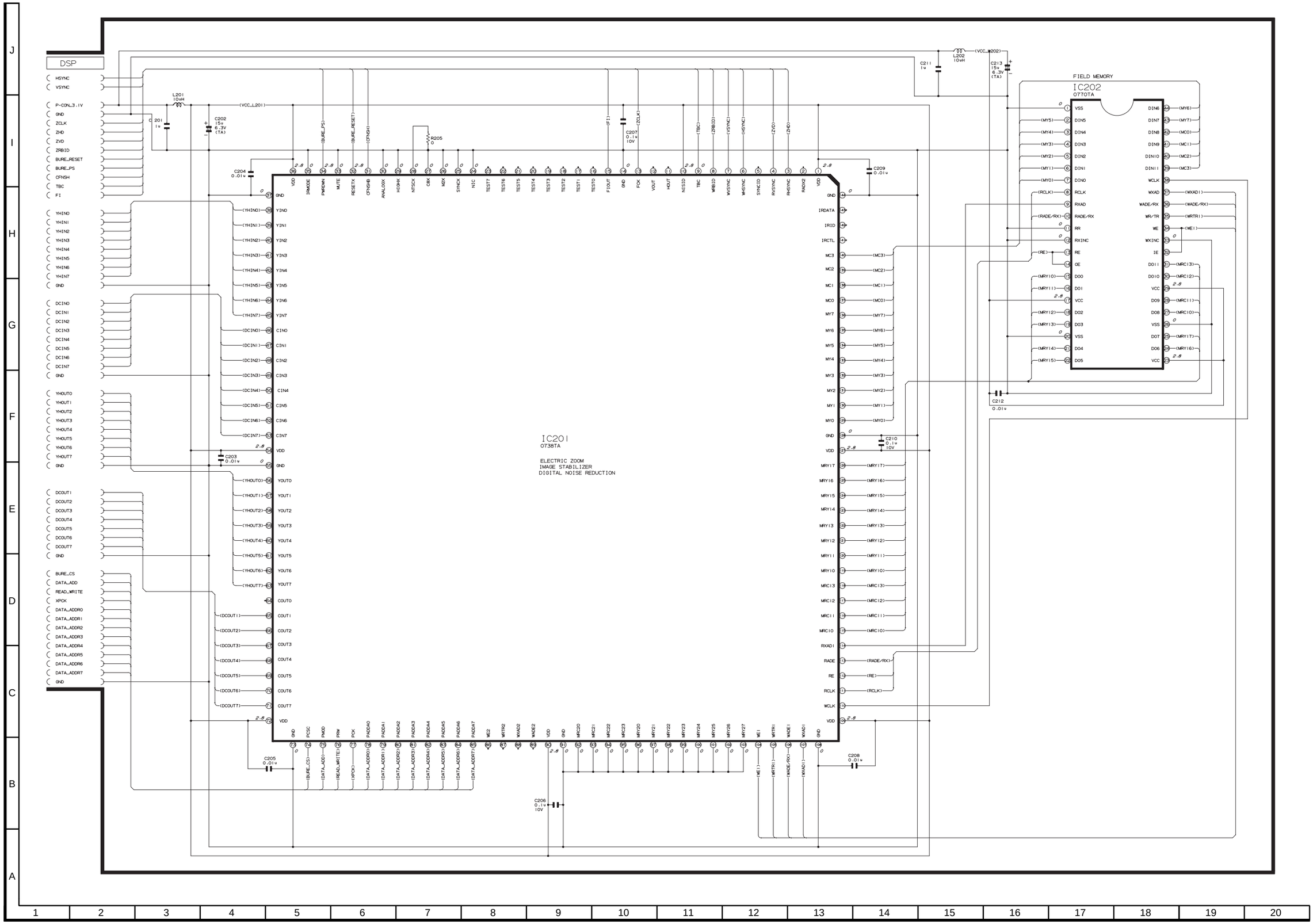
# 8. SCHEMATIC DIAGRAMS 8-1. OVERALL SCHEMATIC DIAGRAM



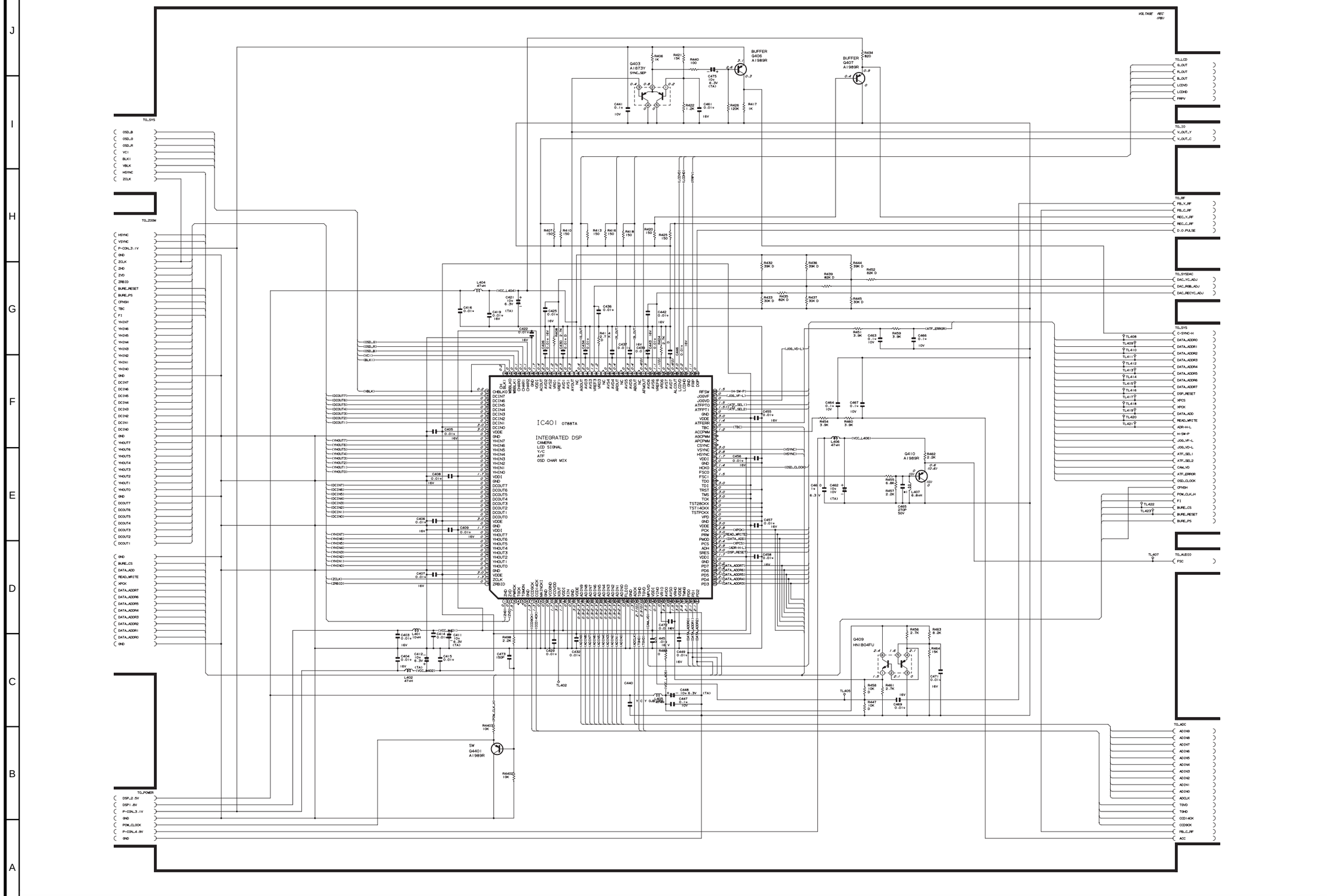
## 8-2. AD_CONVERTER SCHEMATIC DIAGRAM



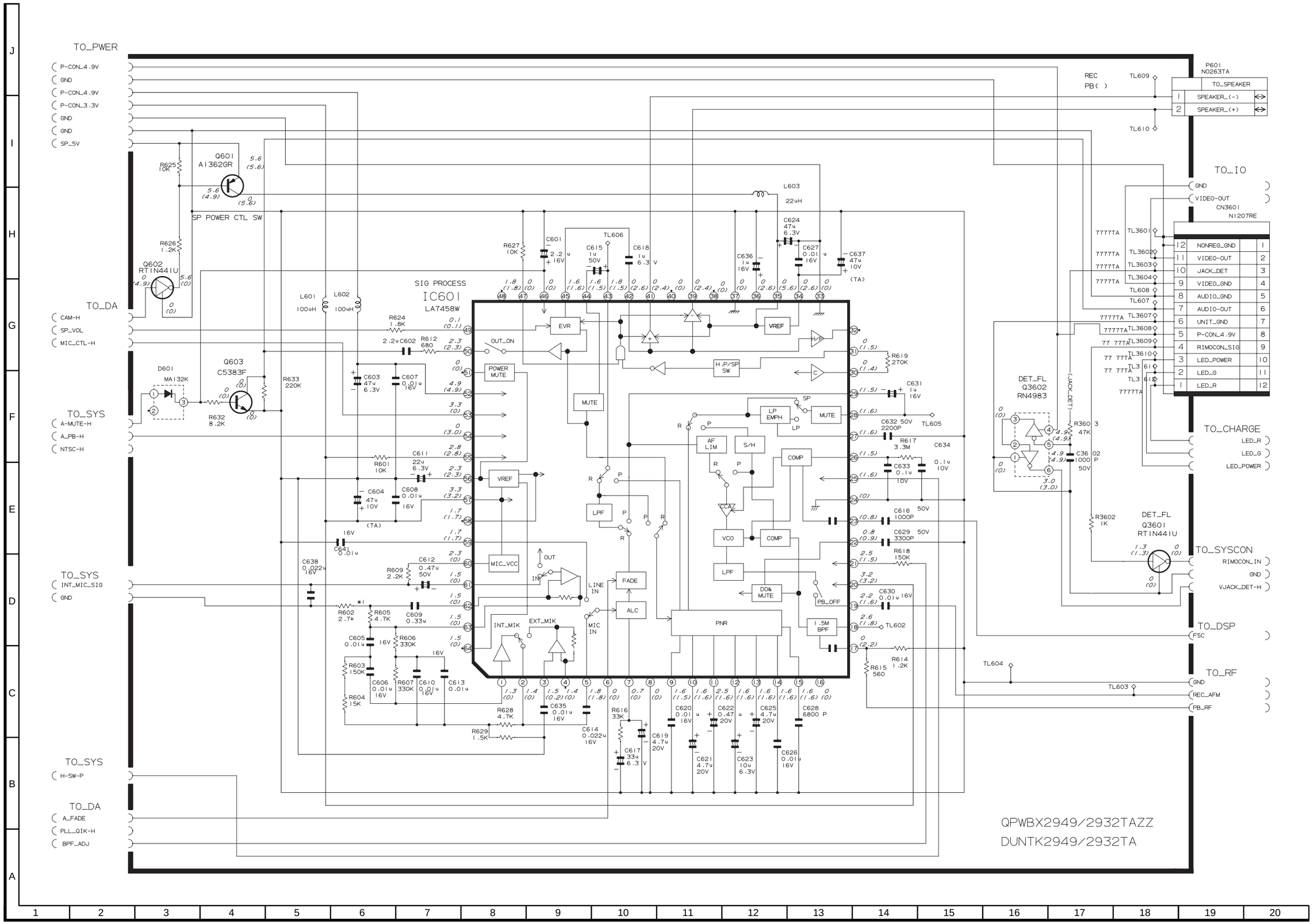
## 8-3. ZOOM SCHEMATIC DIAGRAM



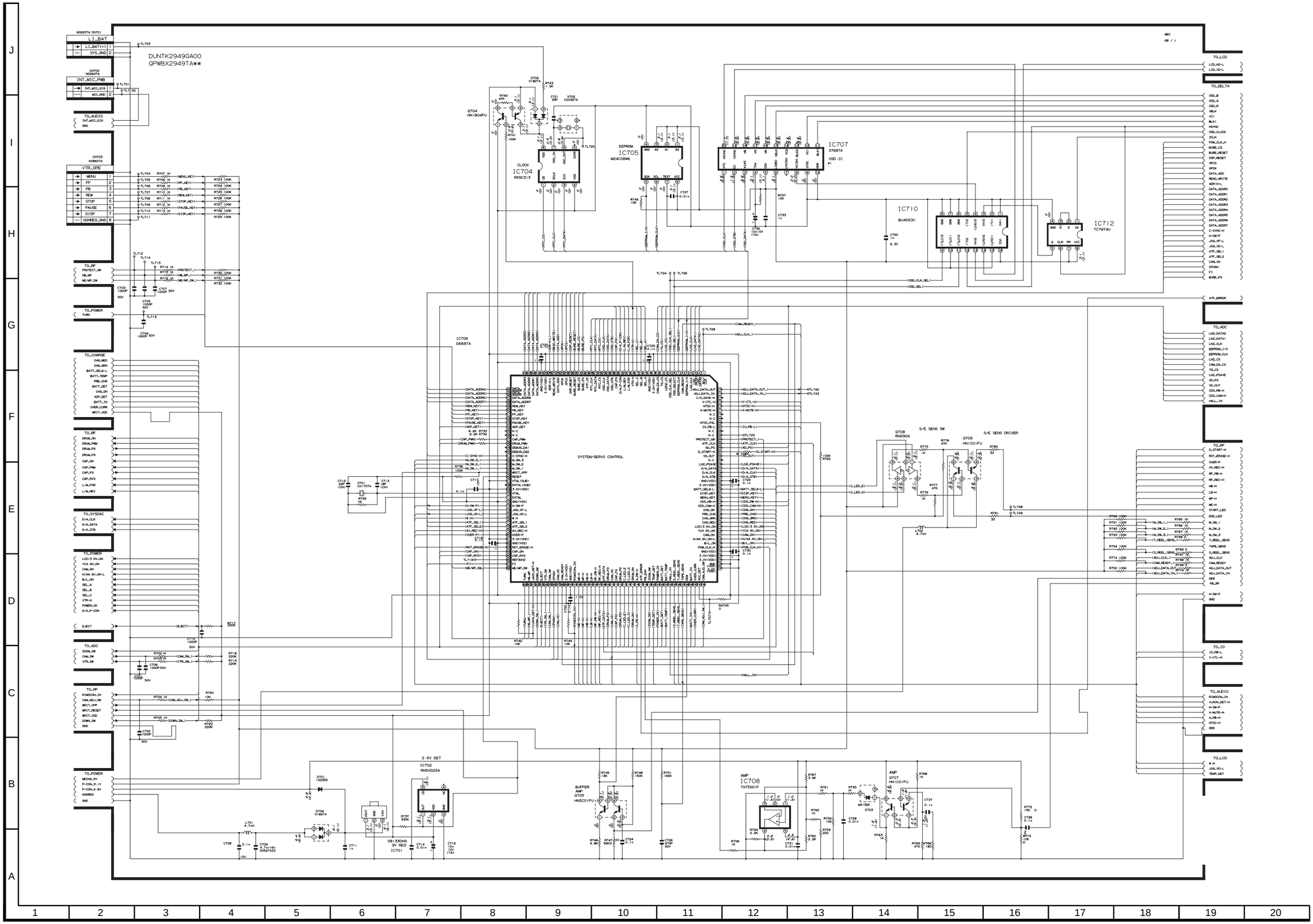
## 8-4. DSP SCHEMATIC DIAGRAM



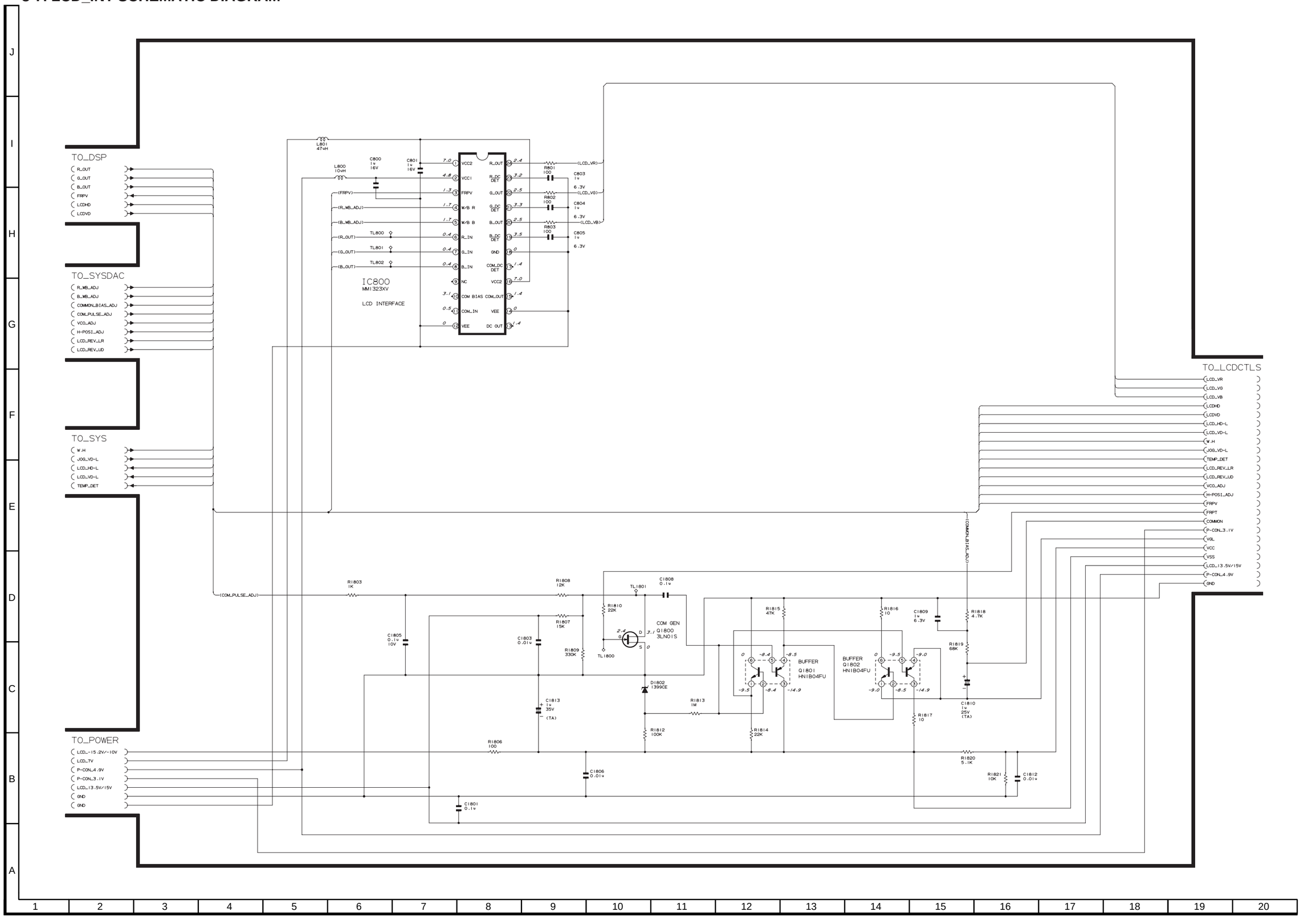
## 8-5. AUDIO SCHEMATIC DIAGRAM



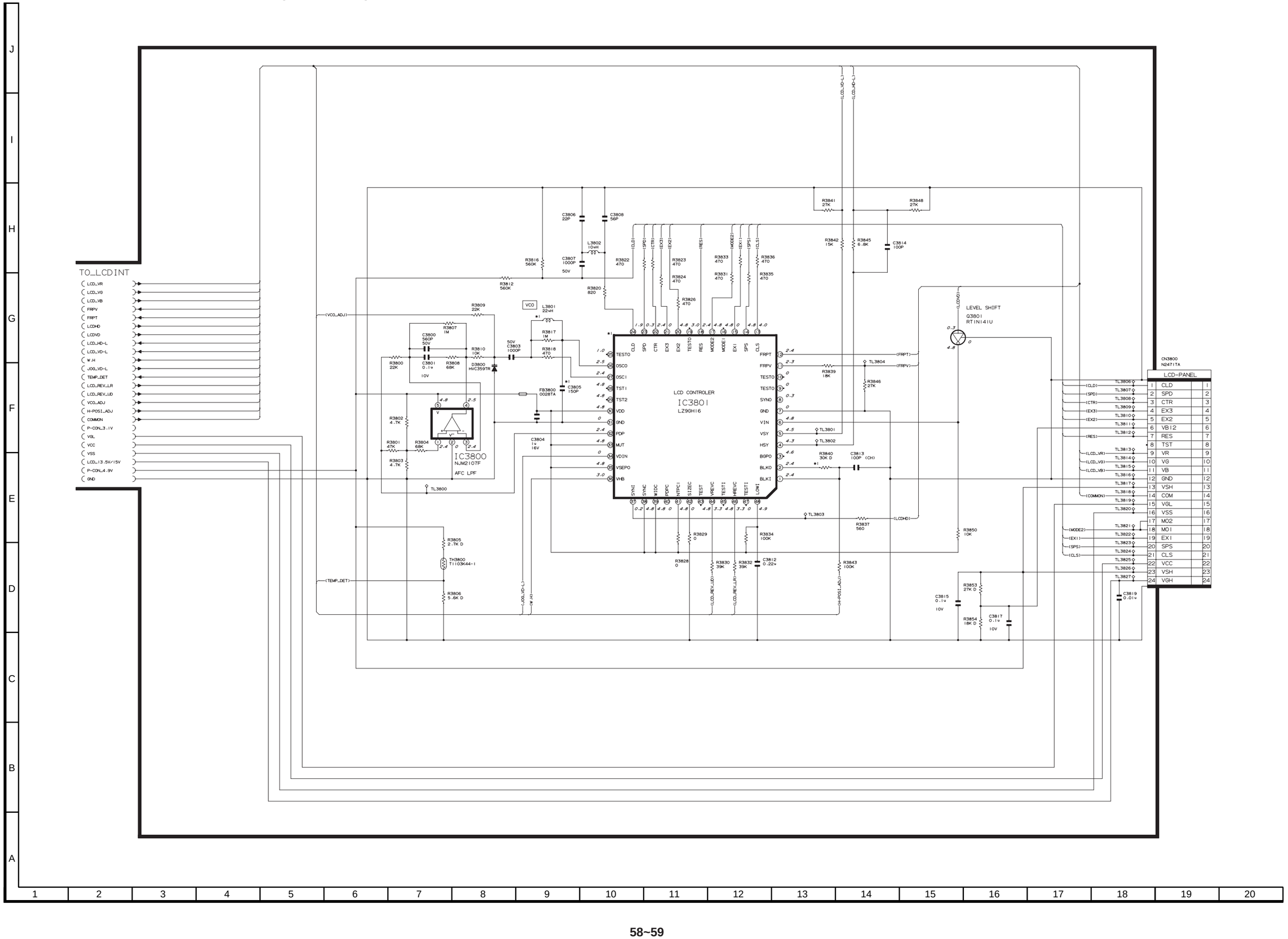
## 8-6. SYSCON SCHEMATIC DIAGRAM



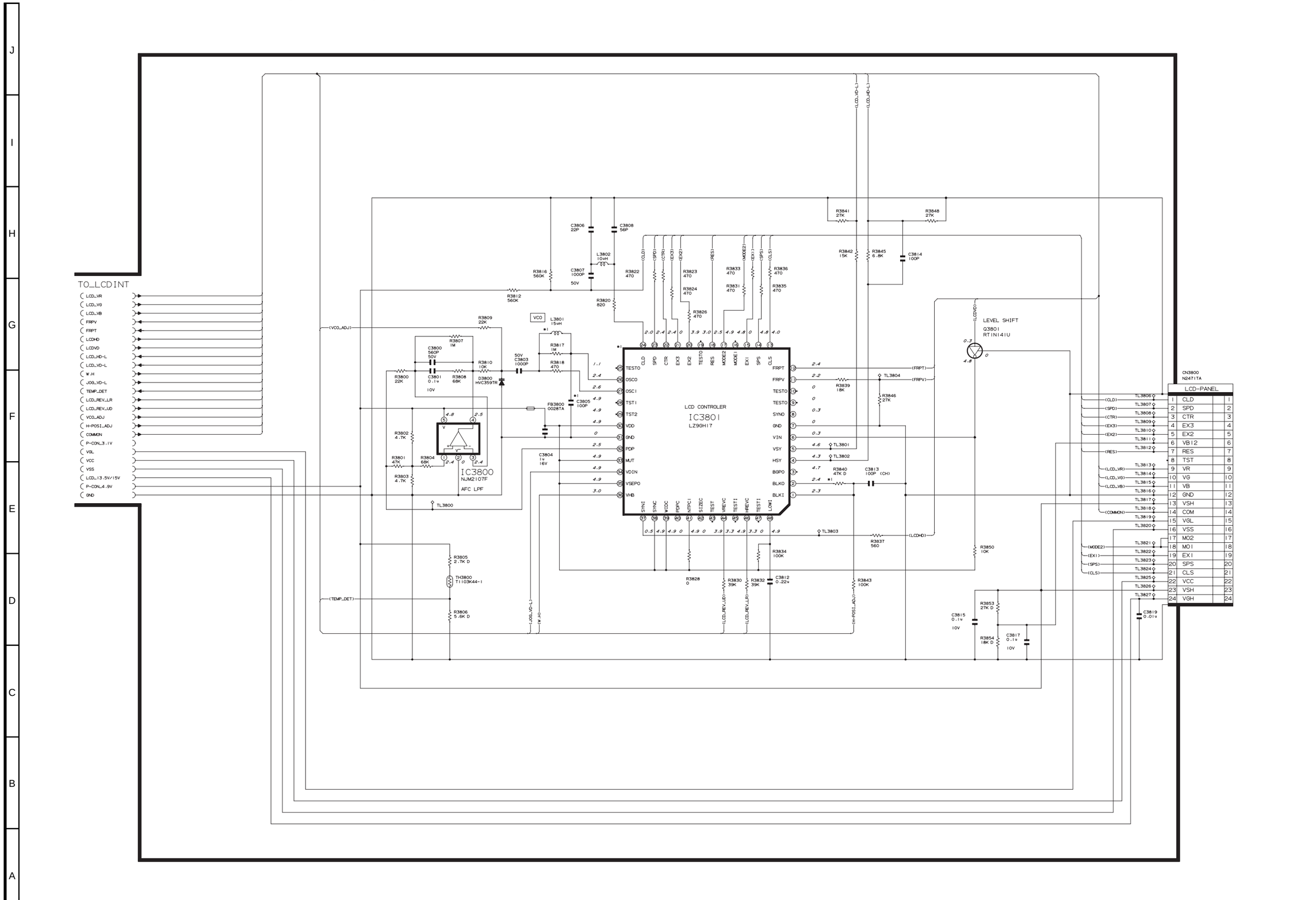
## 8-7. LCD_INT SCHEMATIC DIAGRAM



## 8-8. LCD_CTL SCHEMATIC DIAGRAM(VL-AH150U)

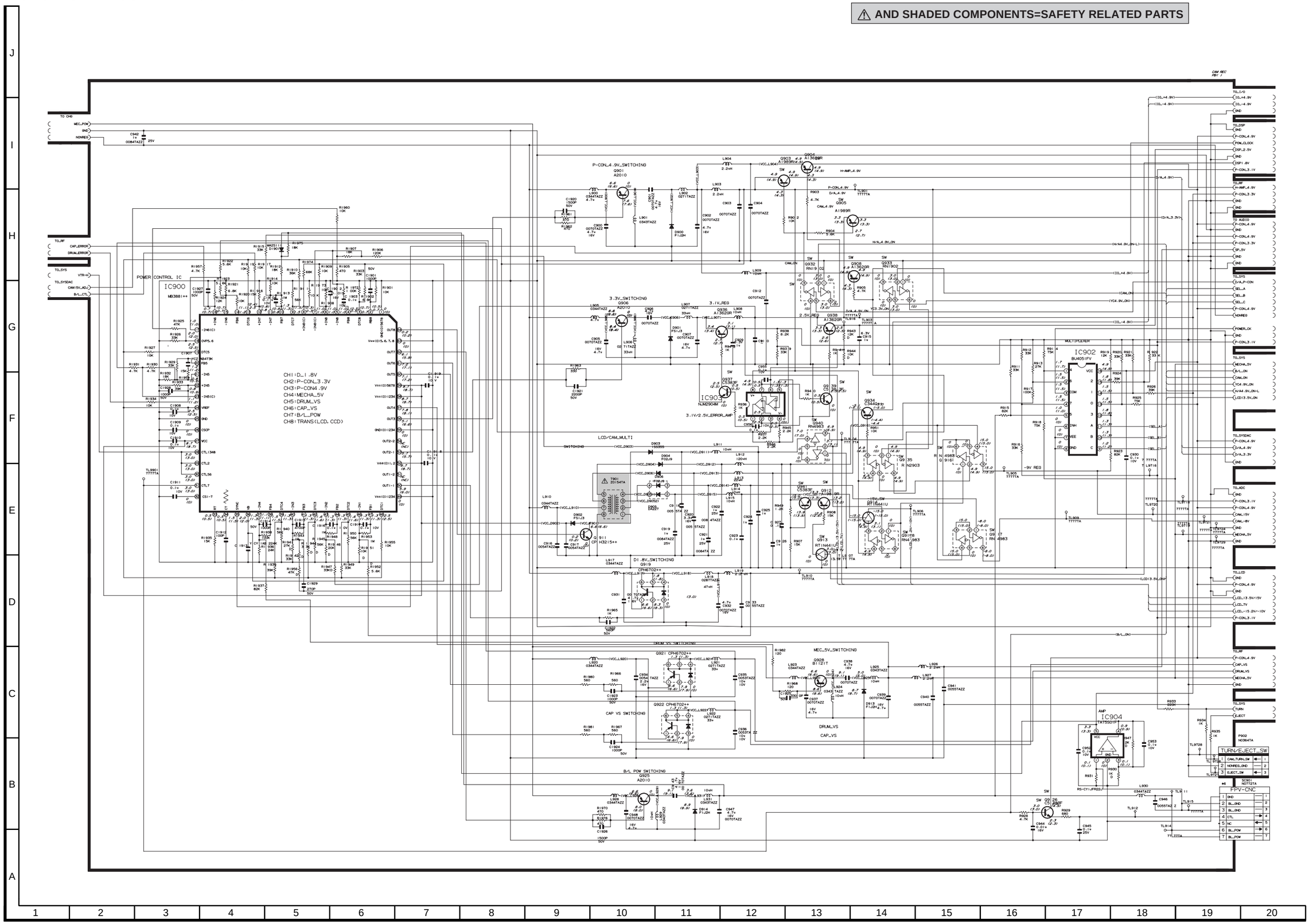


## 8-9. LCD_CTL SCHEMATIC DIAGRAM(VL-AH160U)

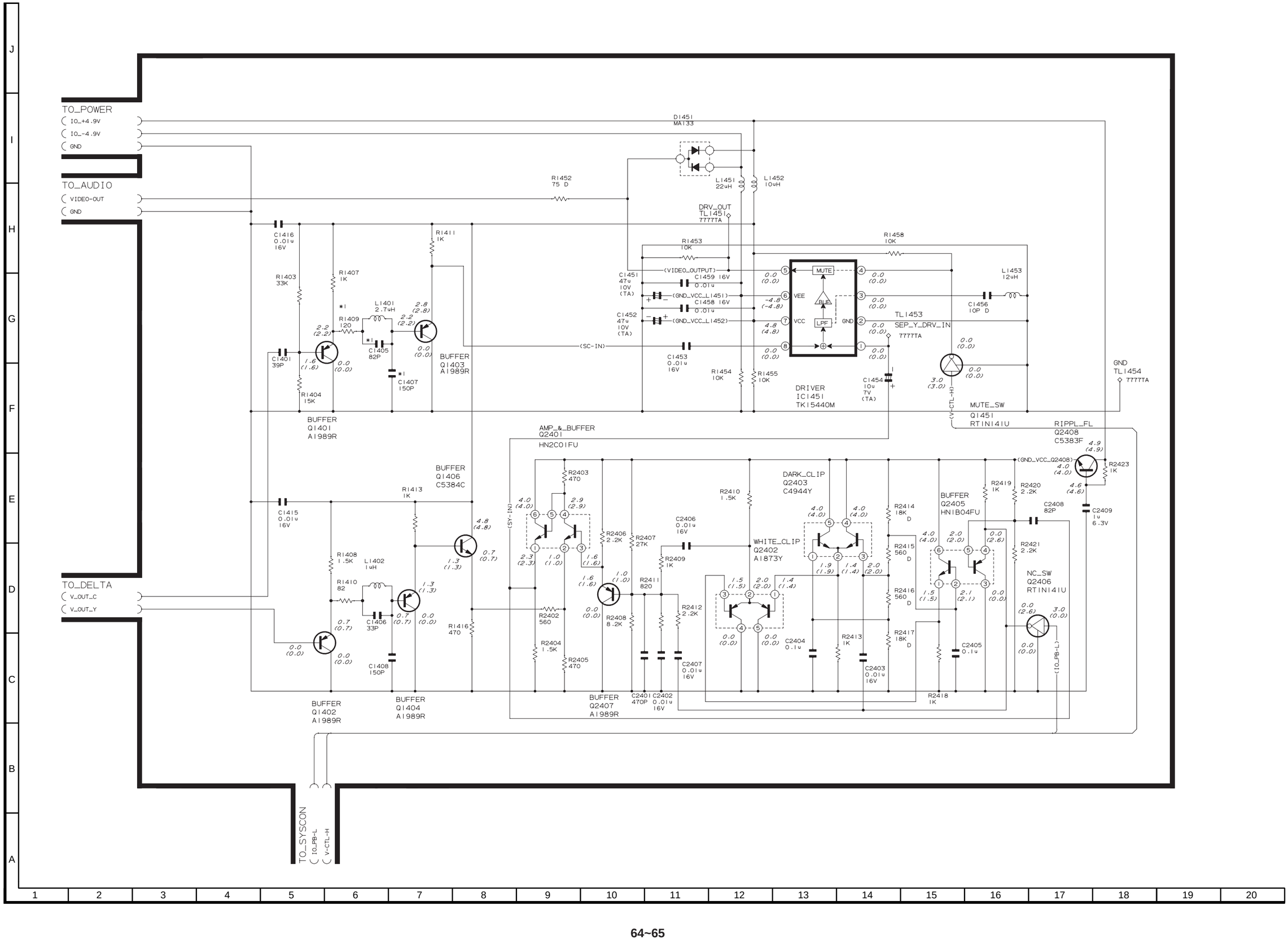


# 8-10. POWER SCHEMATIC DIAGRAM

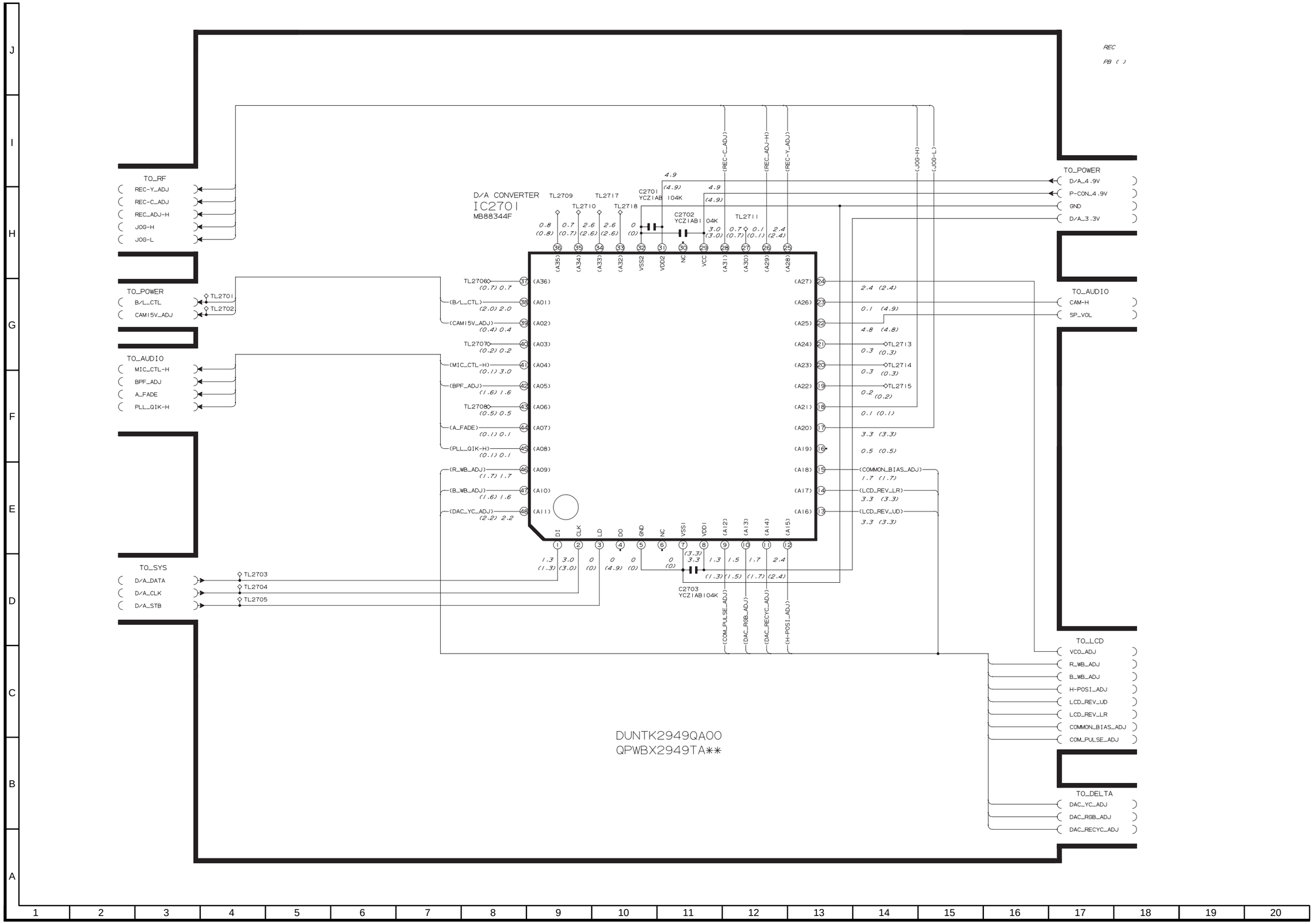
⚠ AND SHADED COMPONENTS=SAFETY RELATED PARTS



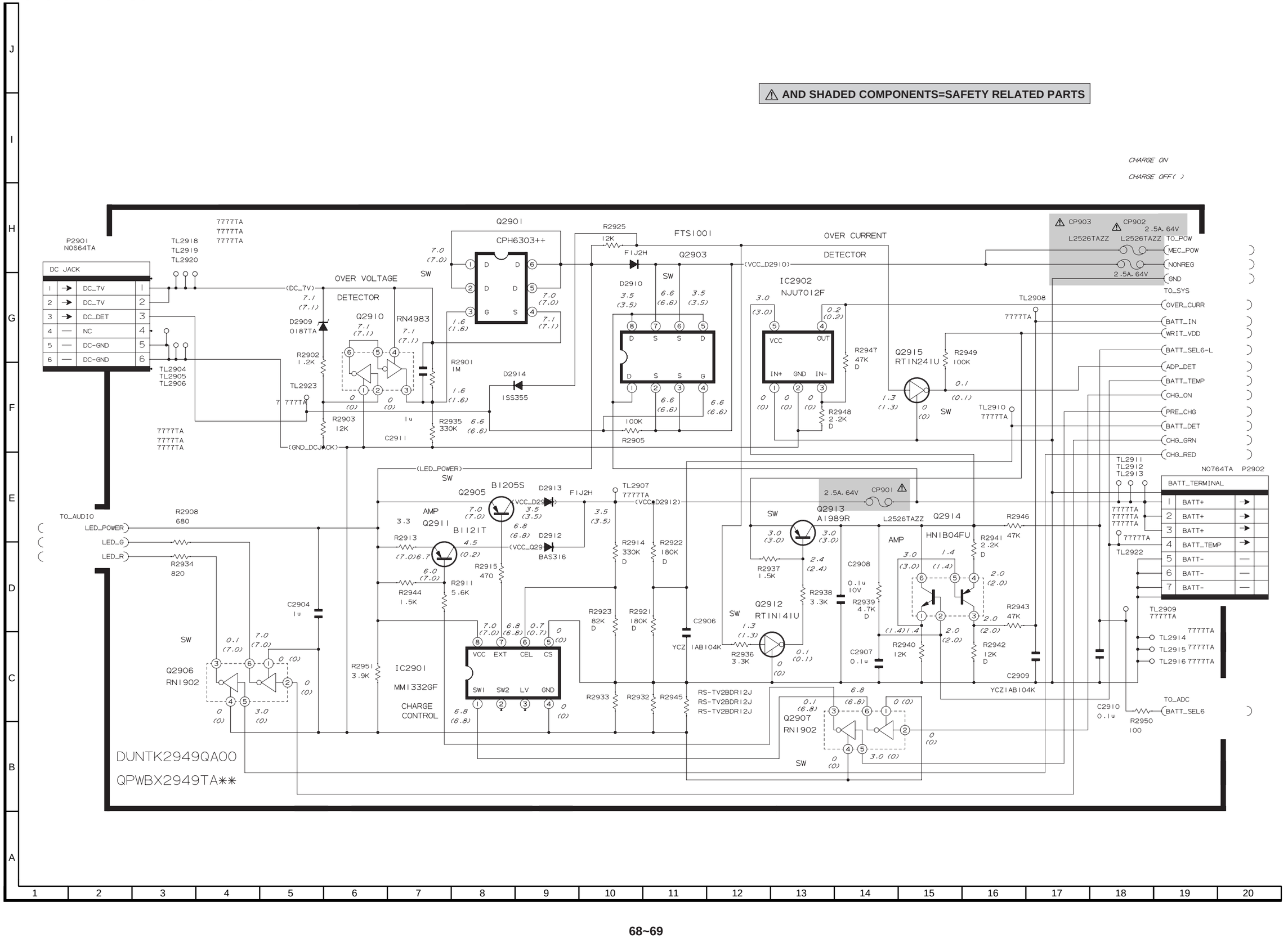
## 8-11. I/O SCHEMATIC DIAGRAM



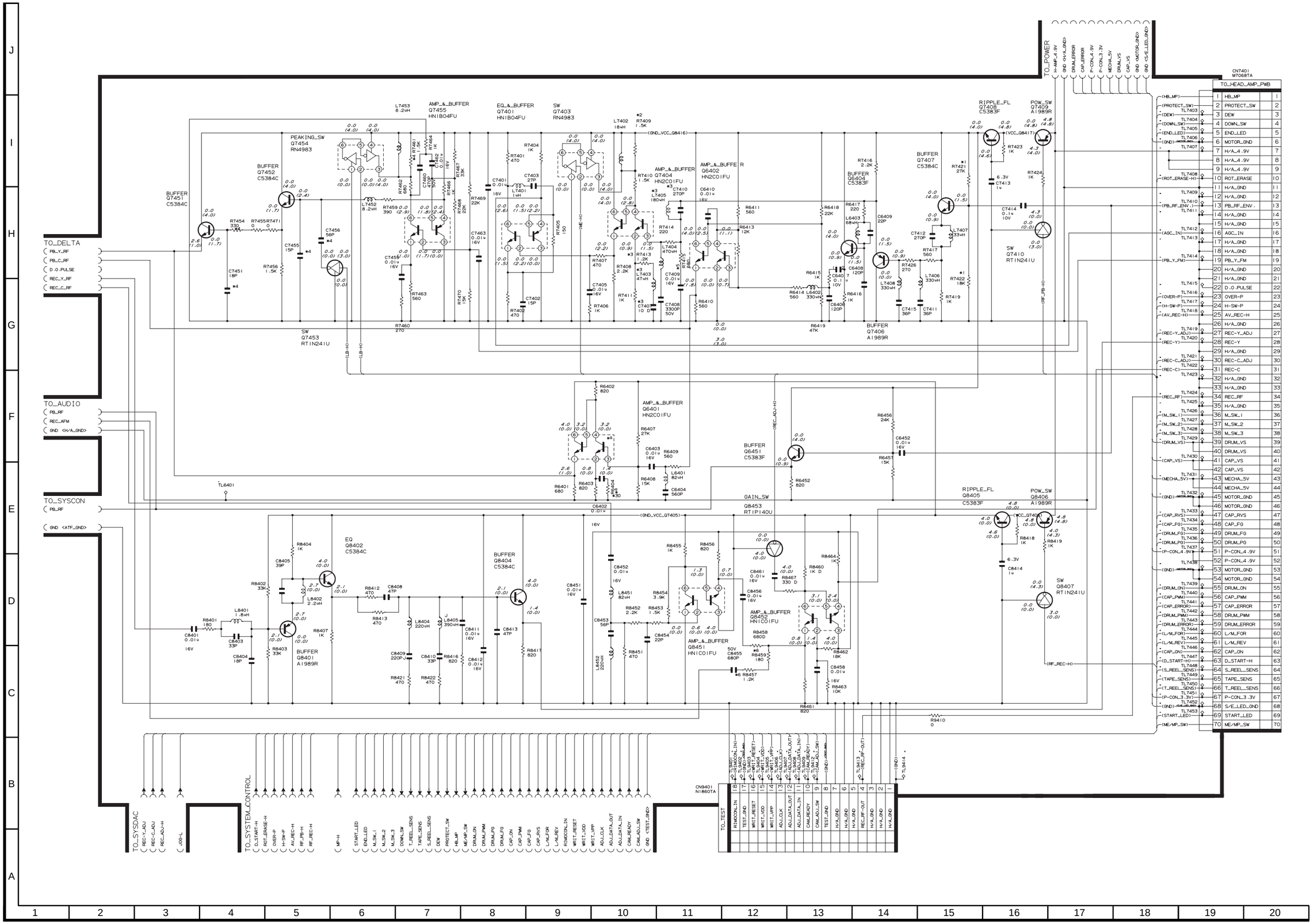
## 8-12. SYSDAC SCHEMATIC DIAGRAM



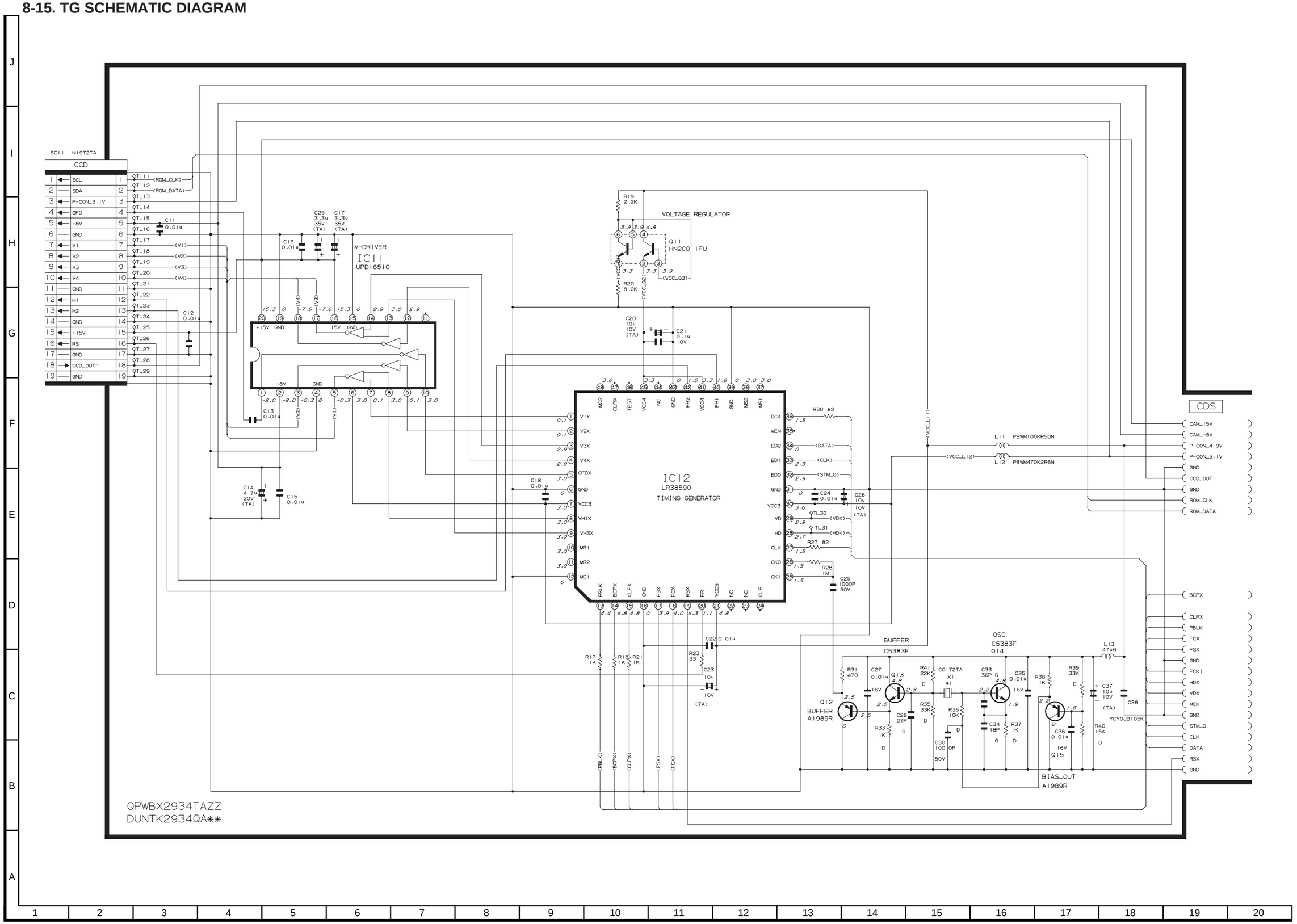
## 8-13. CHARGE SCHEMATIC DIAGRAM



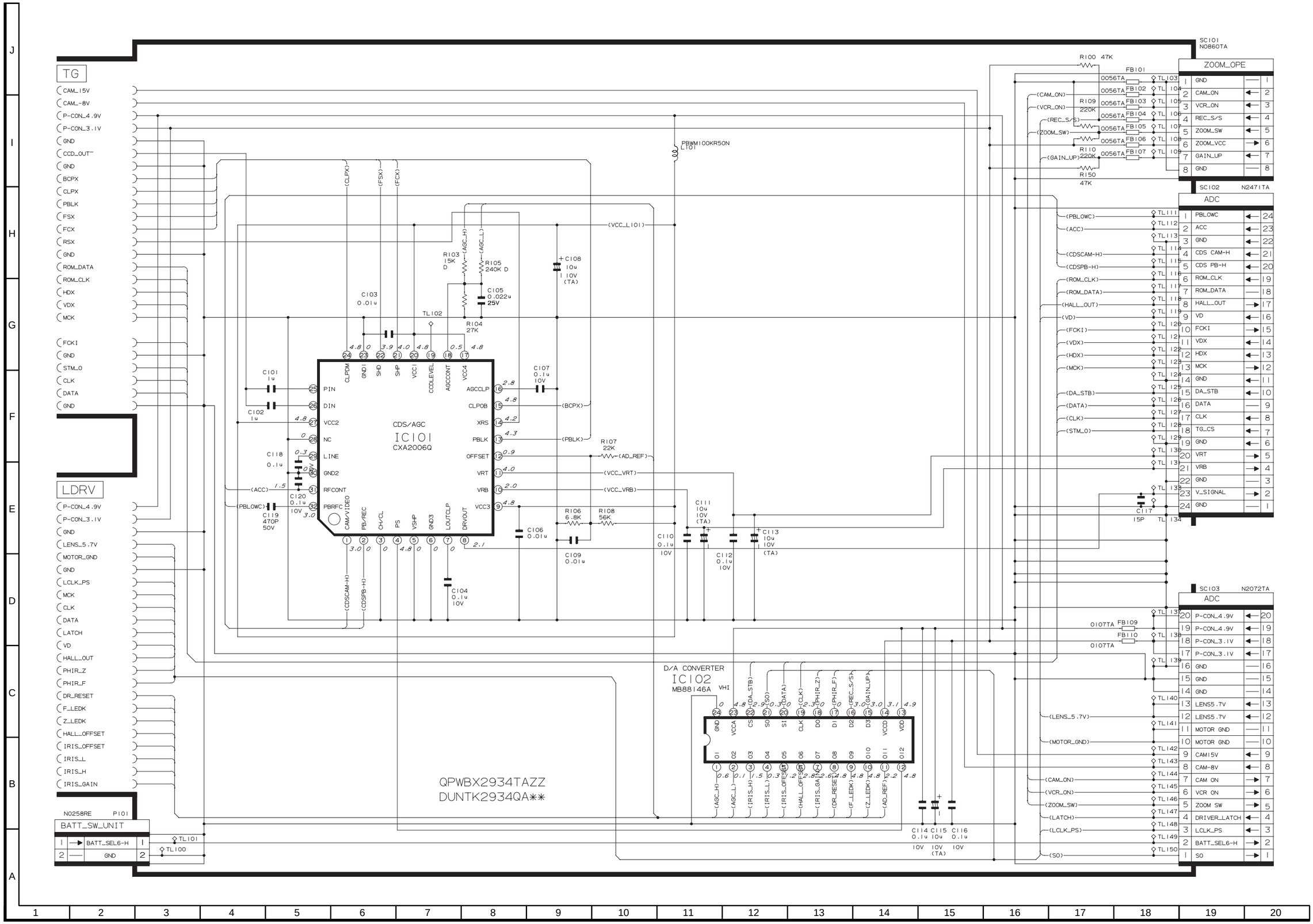
# 8-14. RF SCHEMATIC DIAGRAM



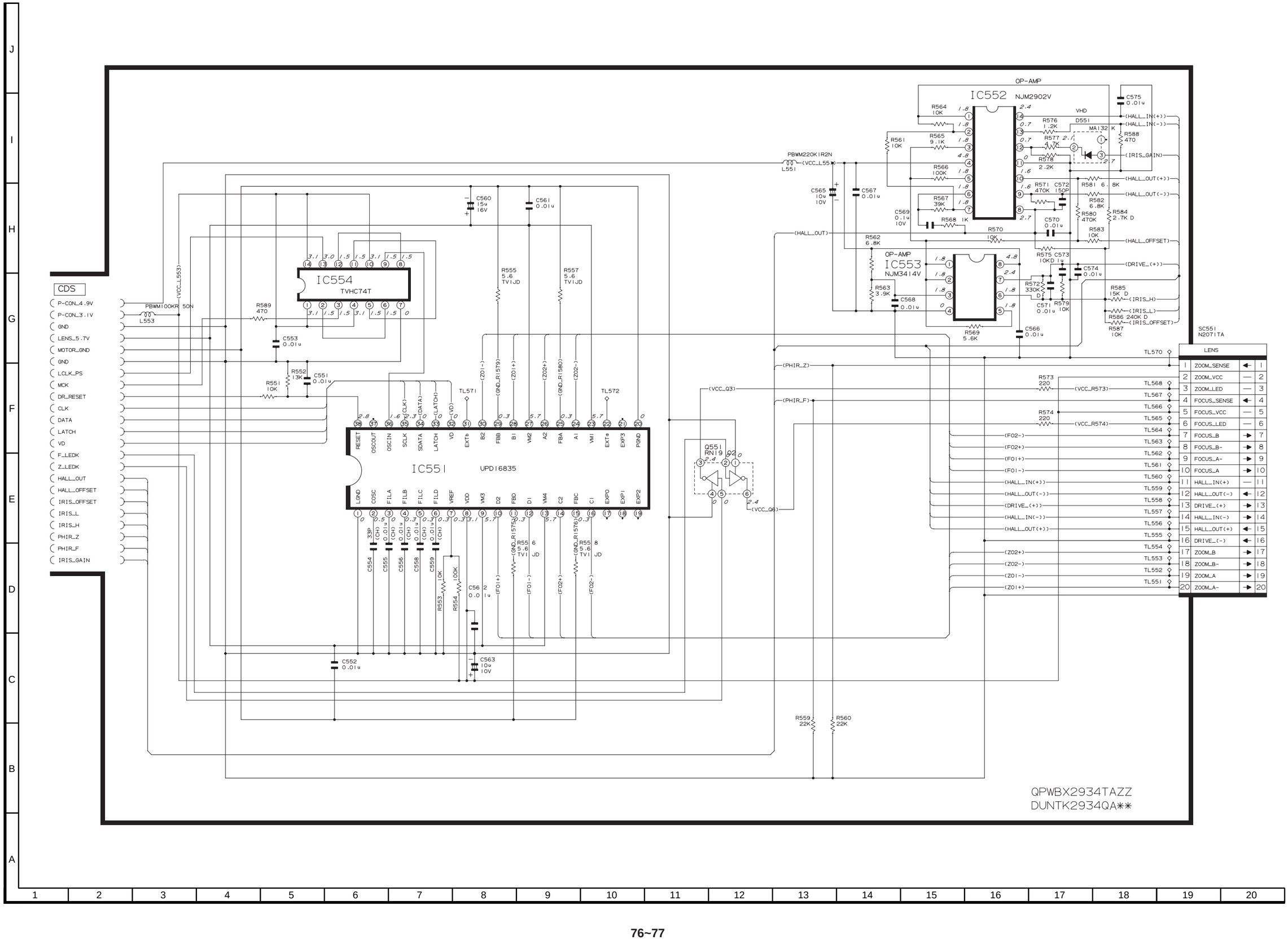
## 8-15. TG SCHEMATIC DIAGRAM



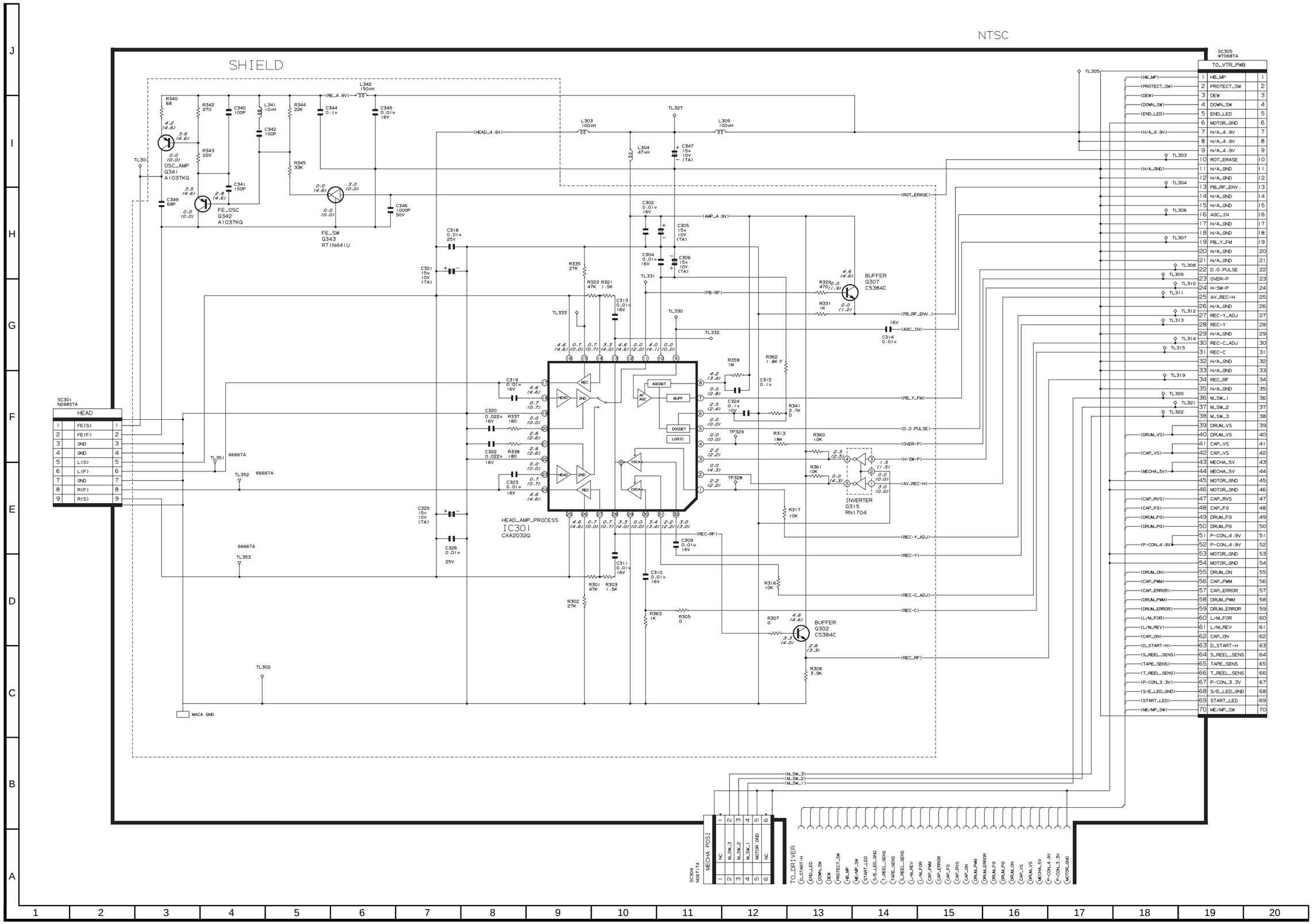
## 8-16. CDS SCHEMATIC DIAGRAM



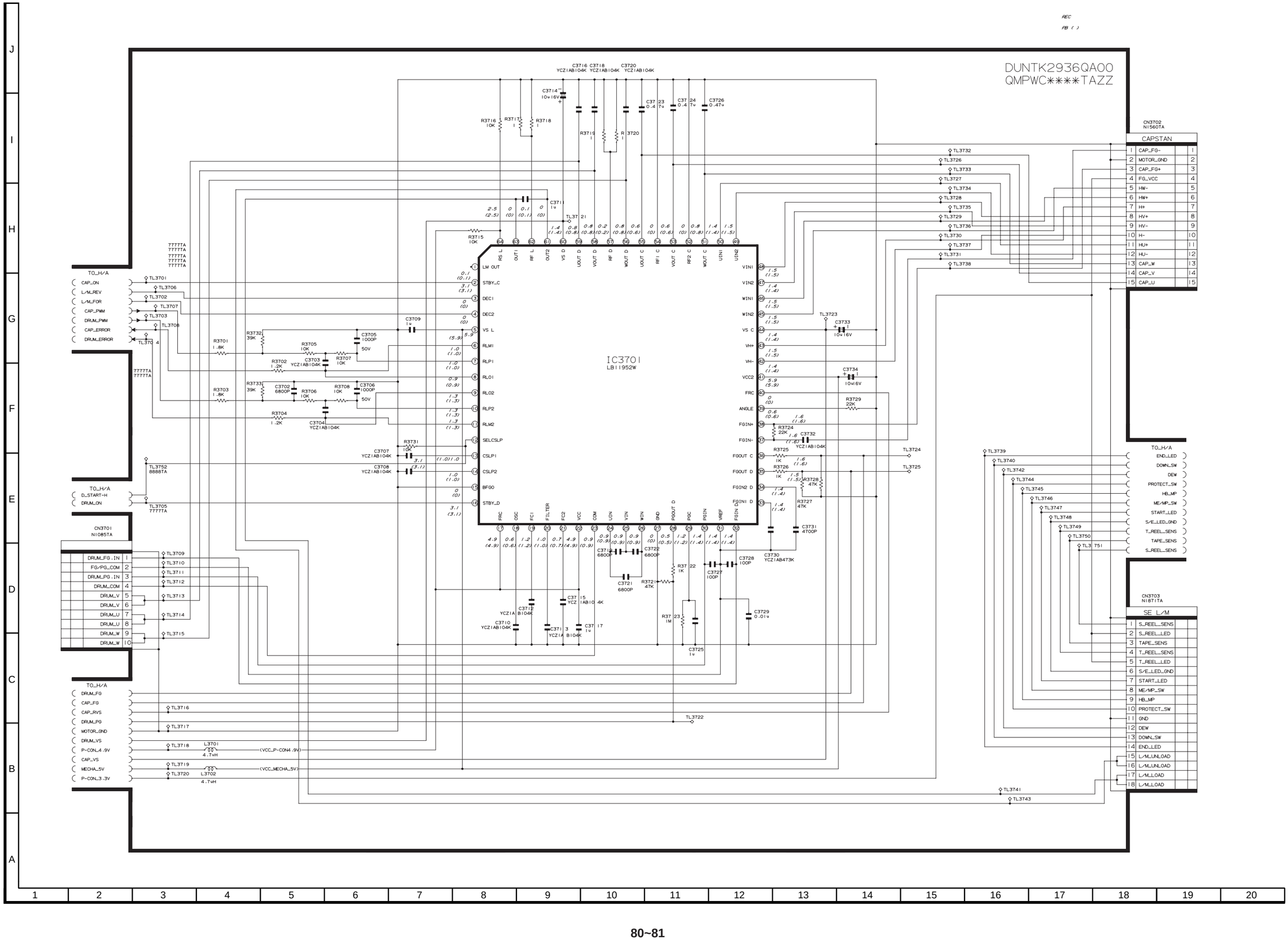
## 8-17. LDRV SCHEMATIC DIAGRAM



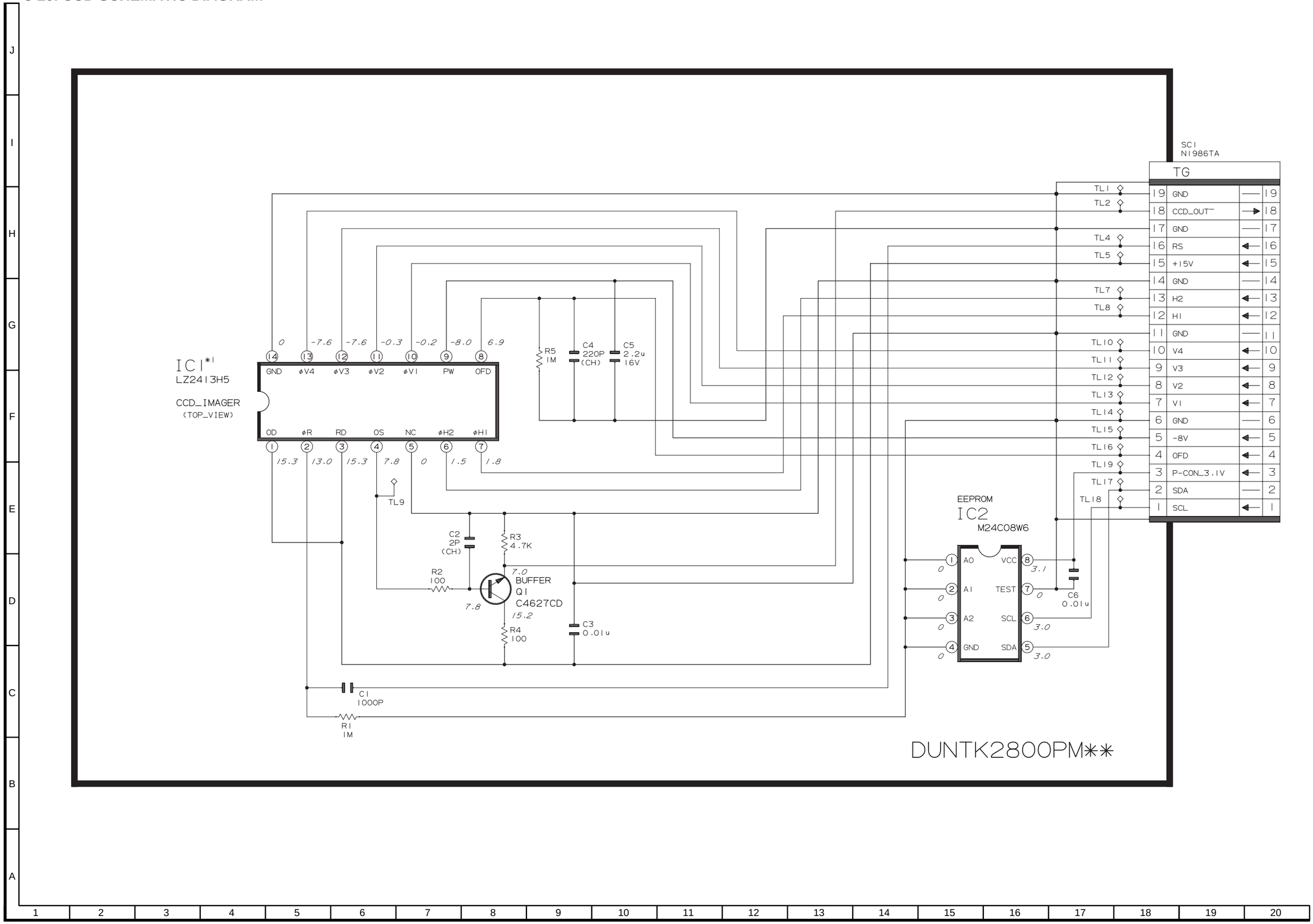
## 8-18. HEAD AMP SCHEMATIC DIAGRAM



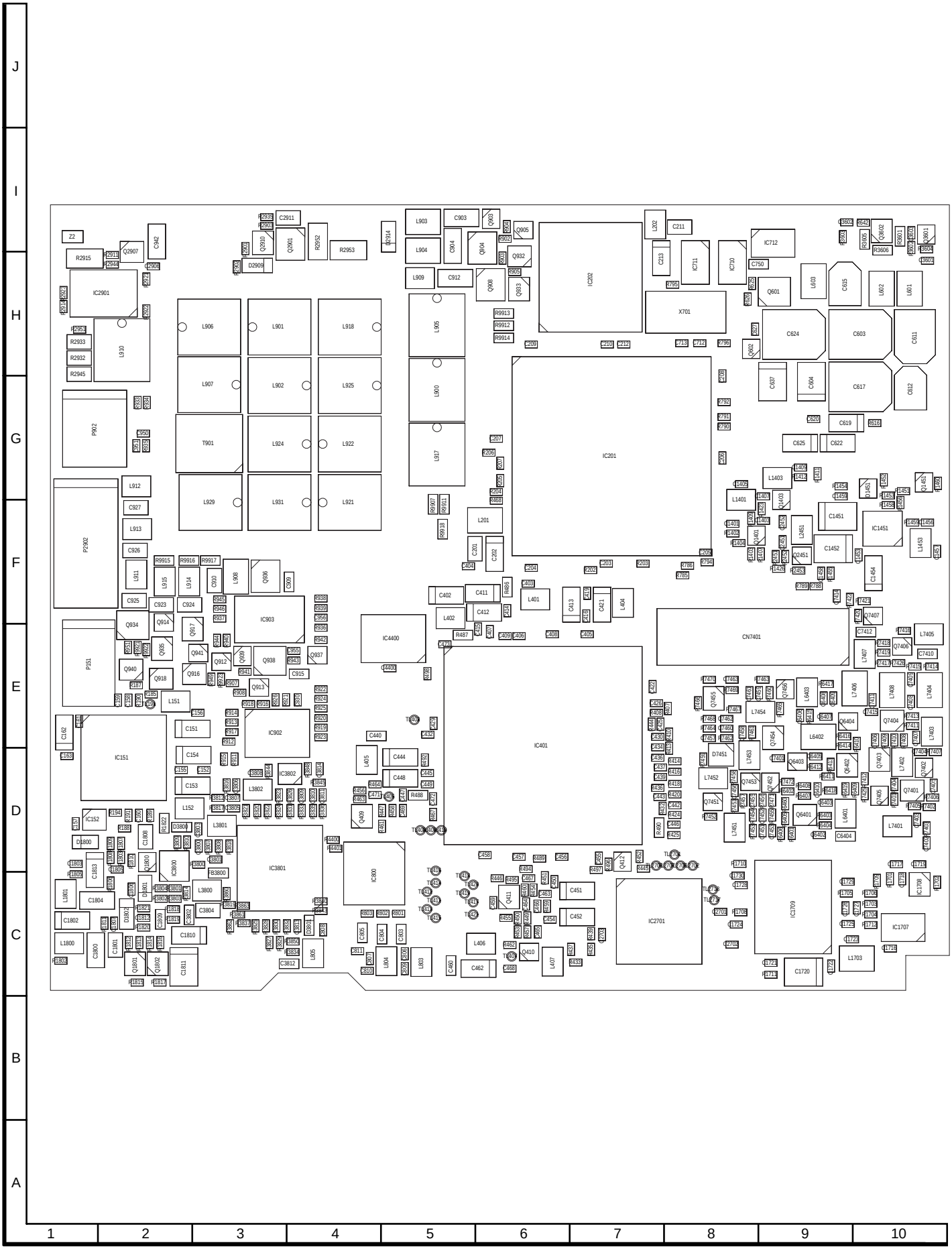
## 8-19. MOTOR DRIVER SCHEMATIC DIAGRAM



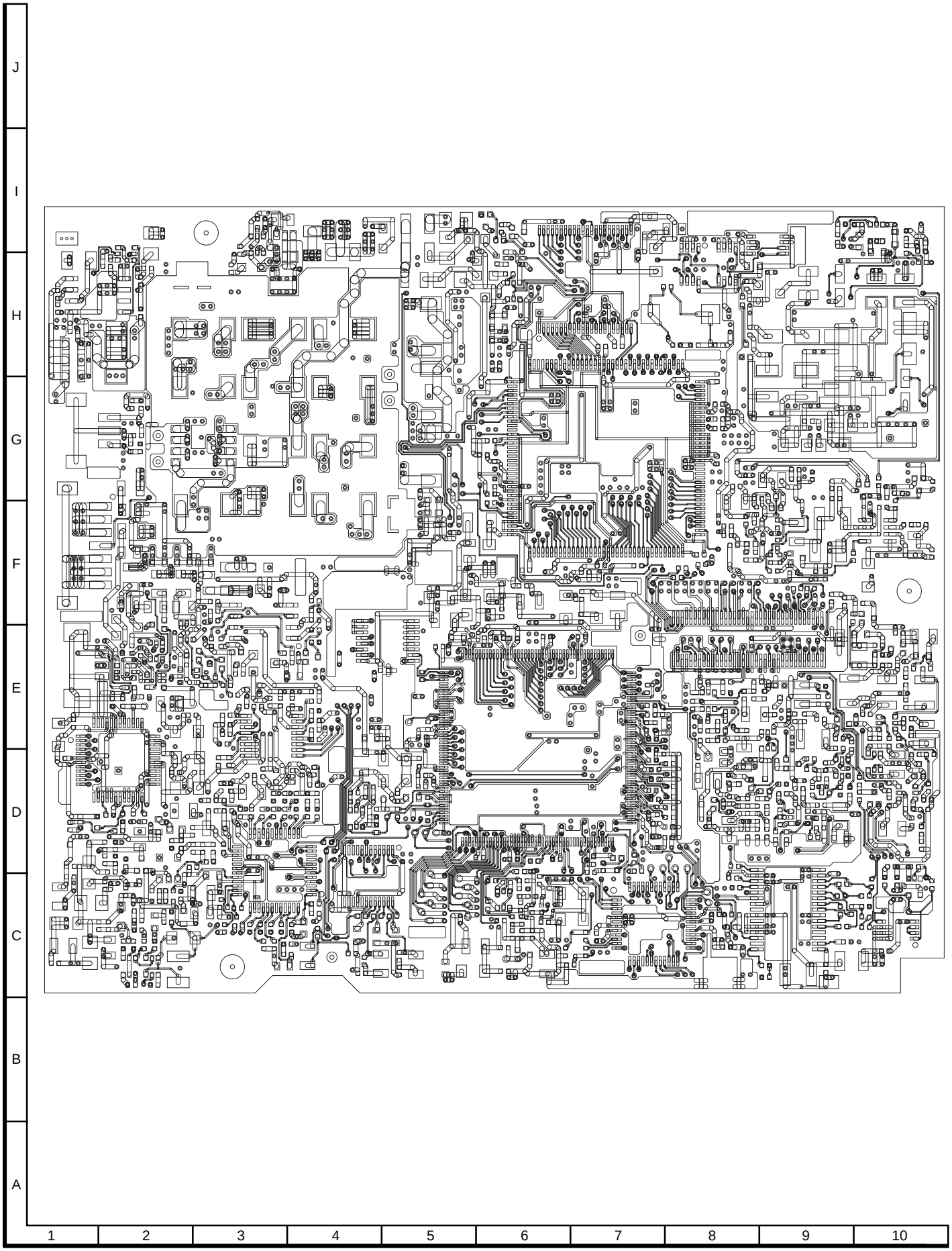
## 8-20. CCD SCHEMATIC DIAGRAM



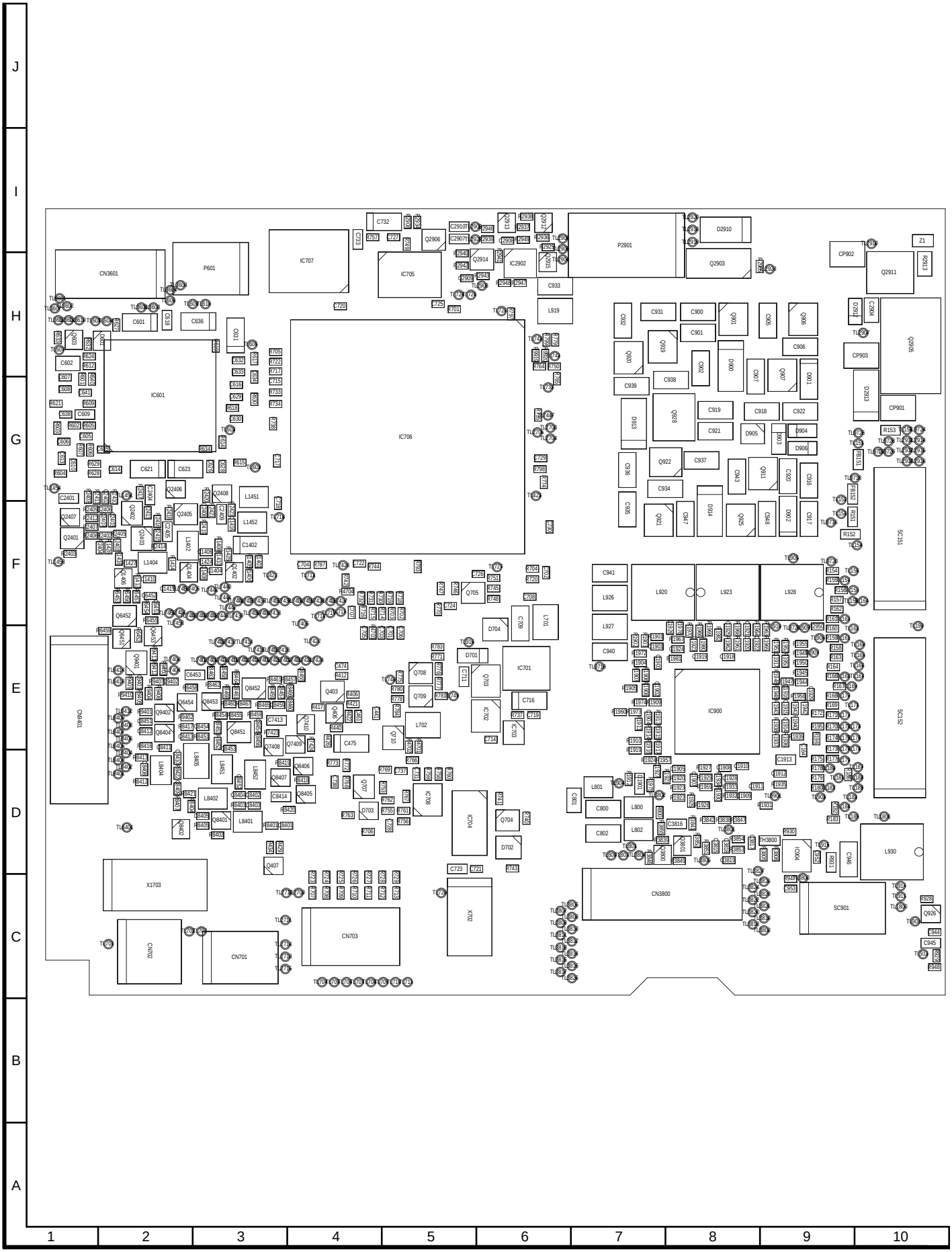
# 9. PRINTED WIRING BOARD ASSEMBLIES VCR PWB Component Side SIDE A



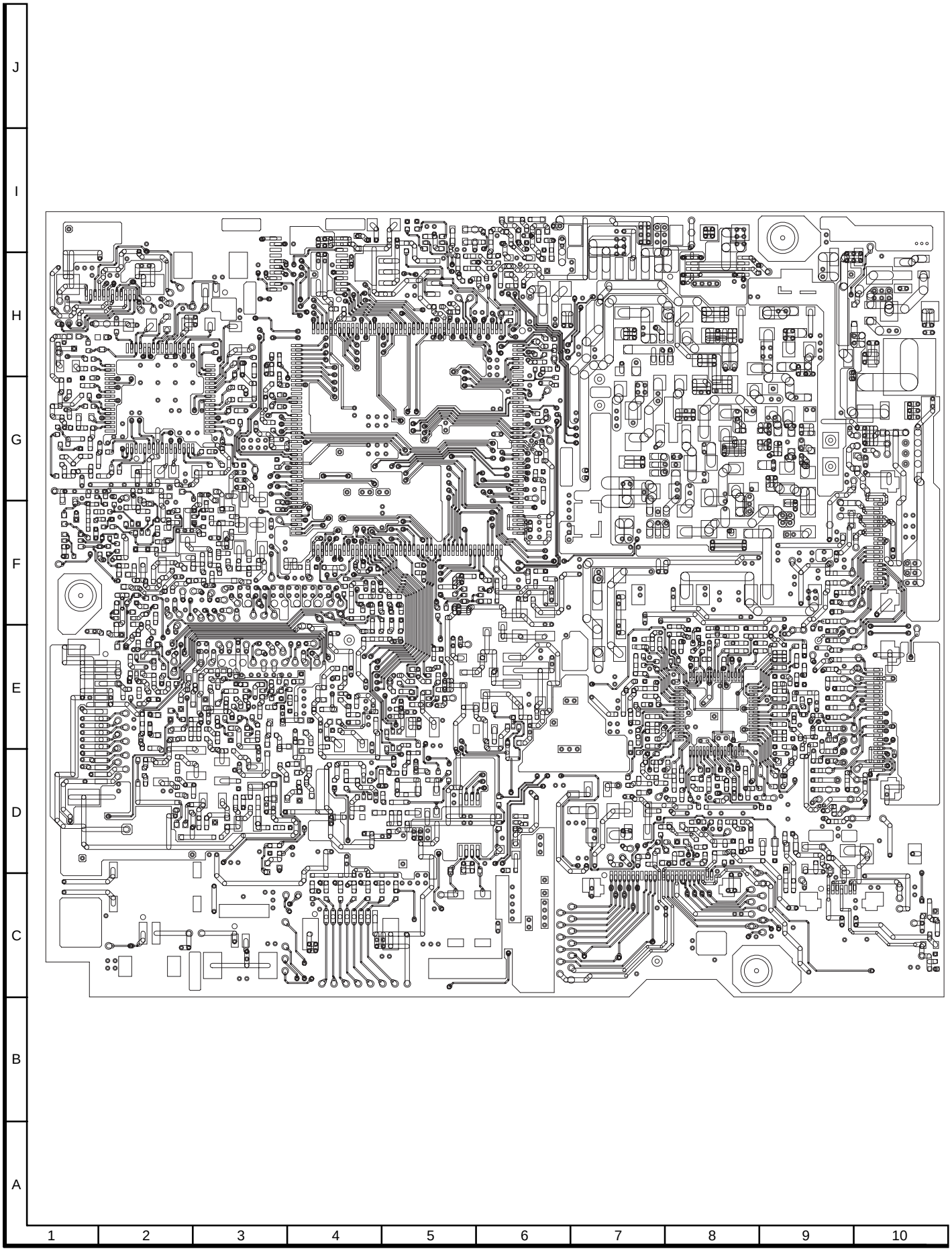
## VCR PWB Wiring Side SIDE A



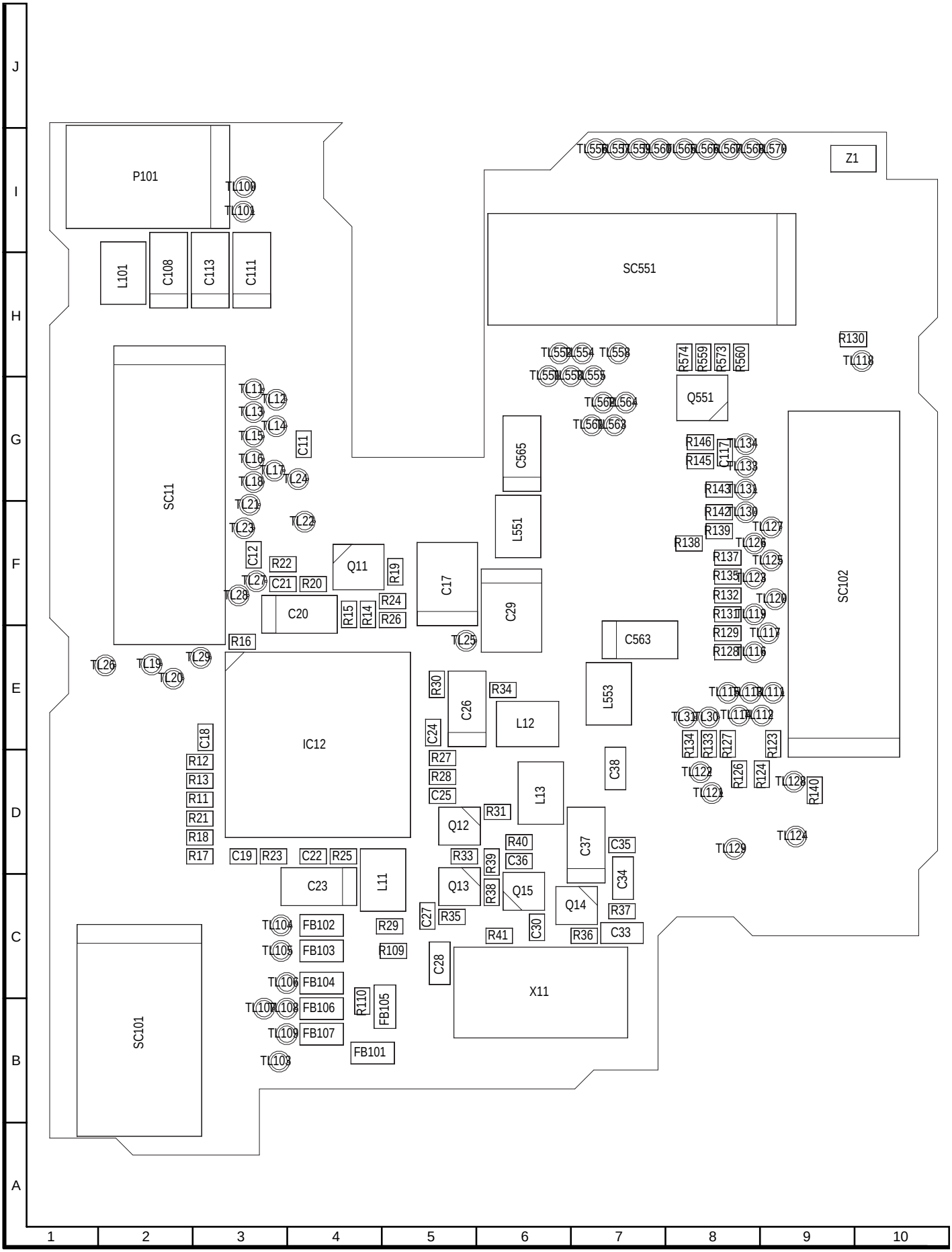
# VCR PWB Component Side SIDE B



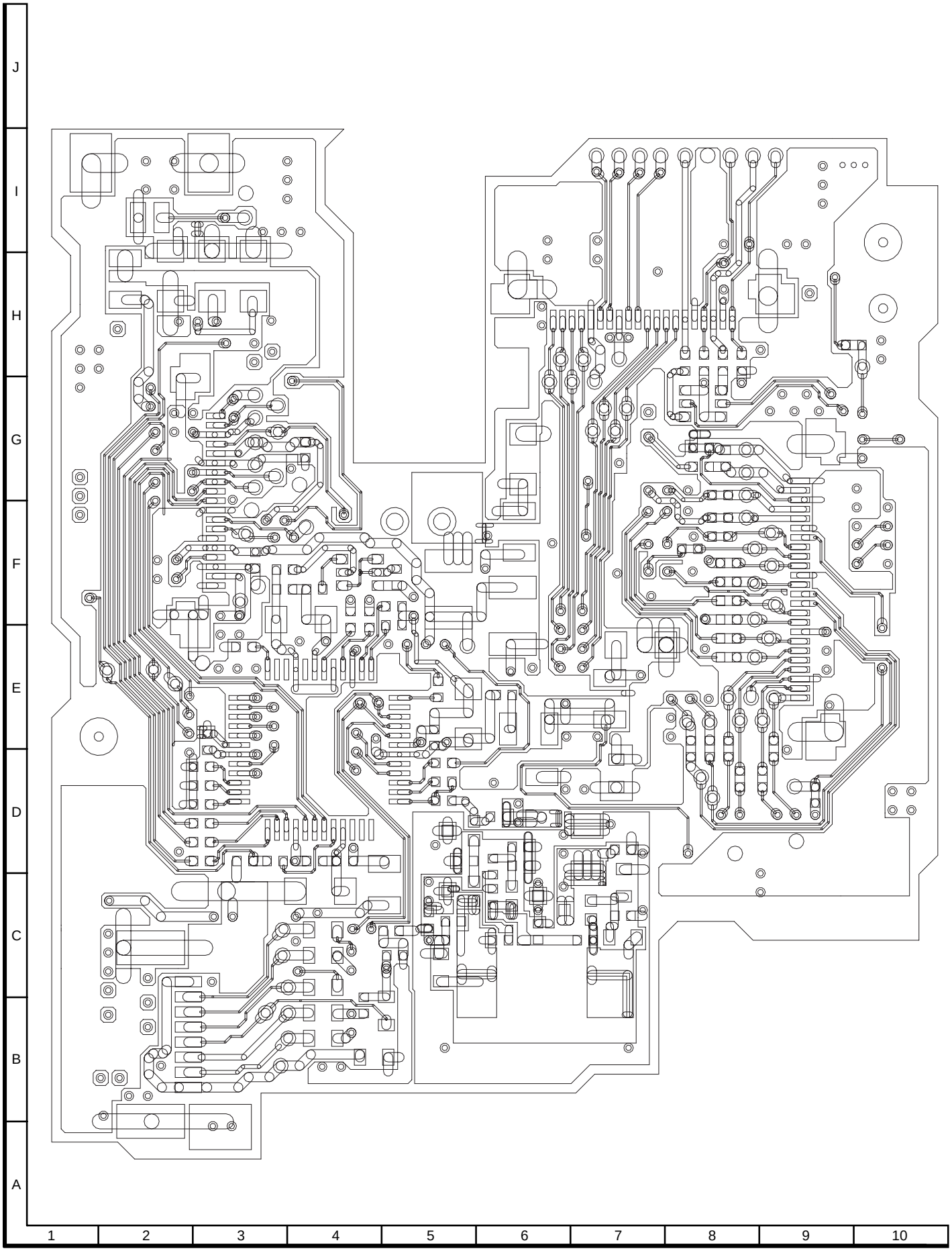
## VCR PWB Wiring Side SIDE B



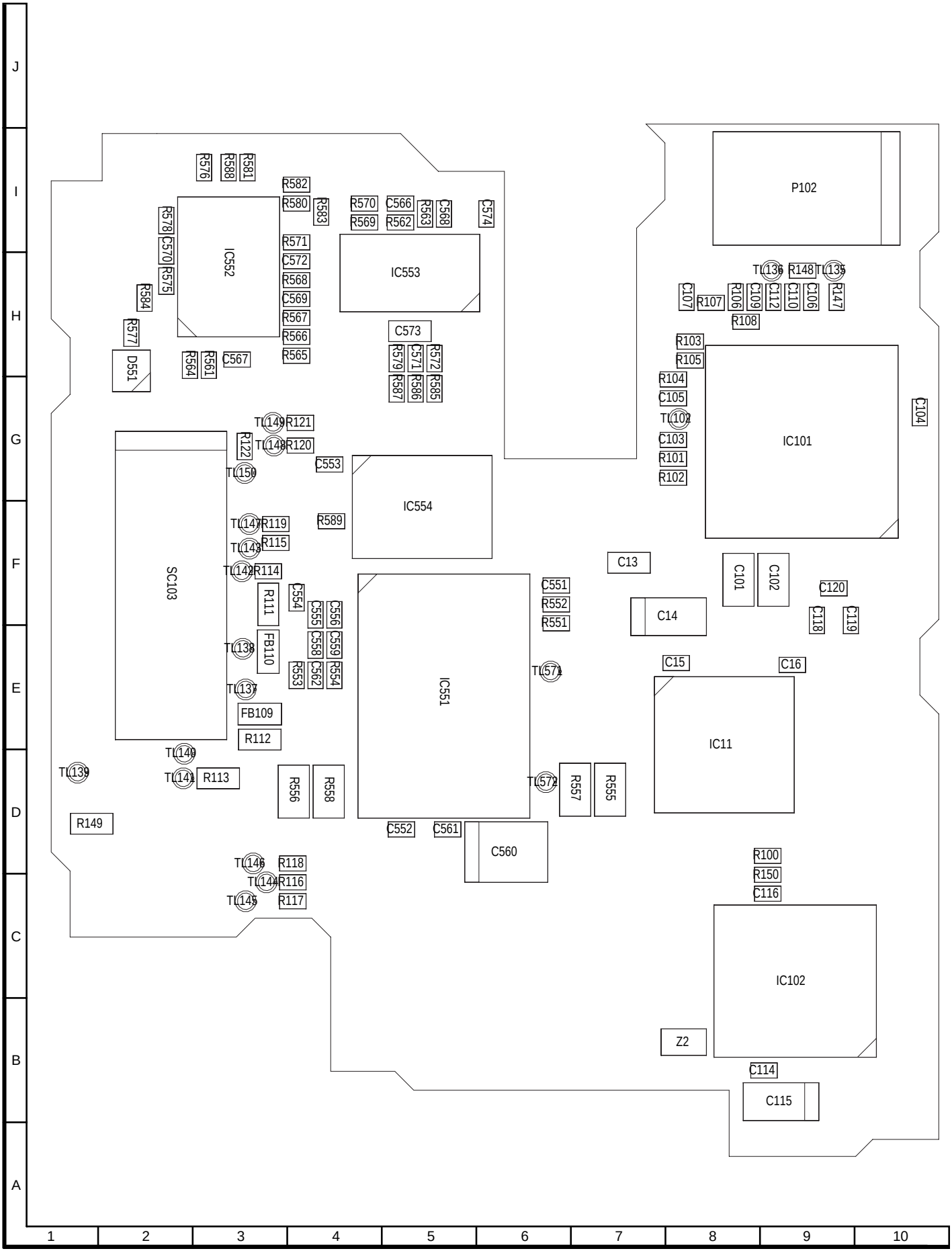
## CAMERA PWB Component Side SIDE A



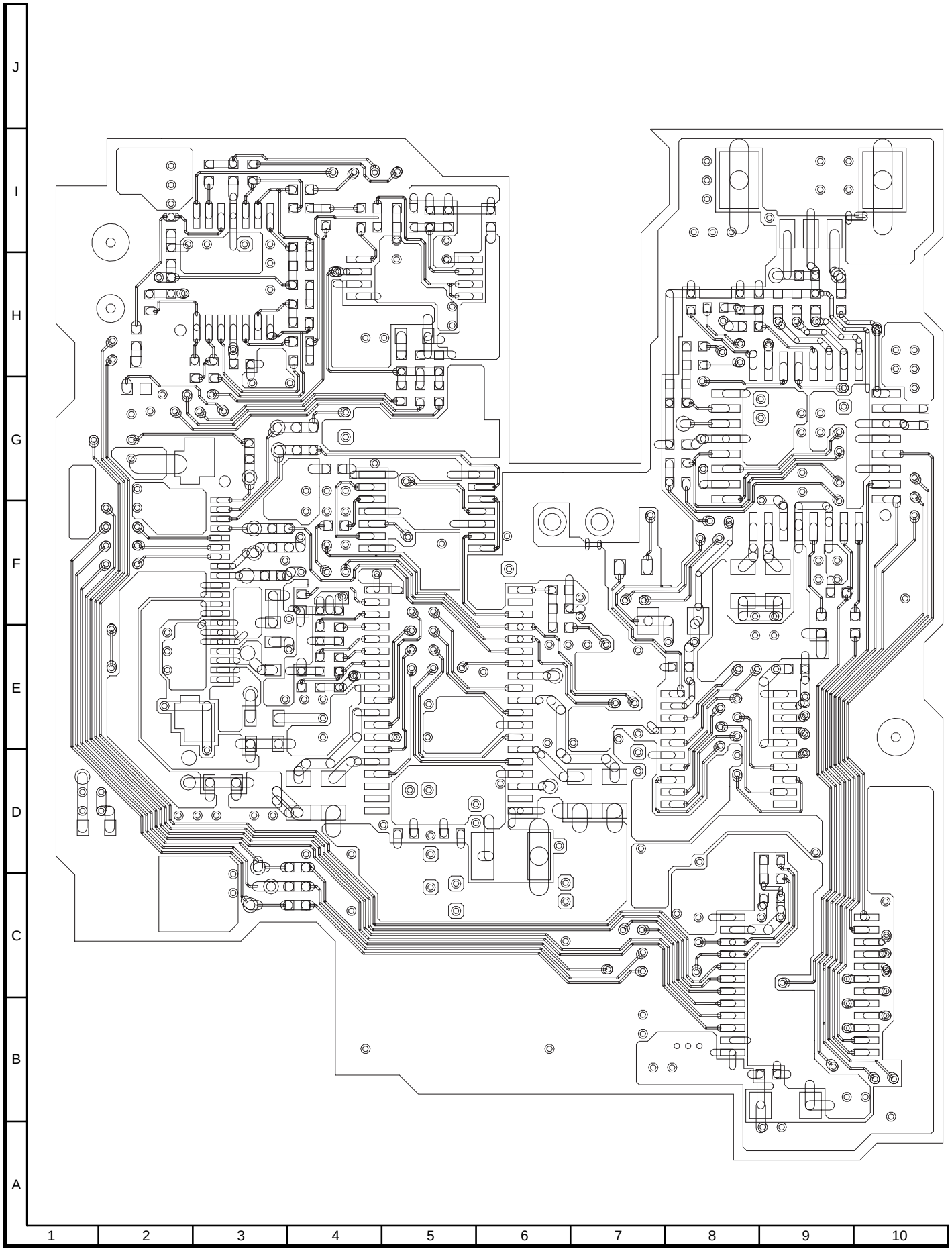
## CAMERA PWB Wiring Side SIDE A



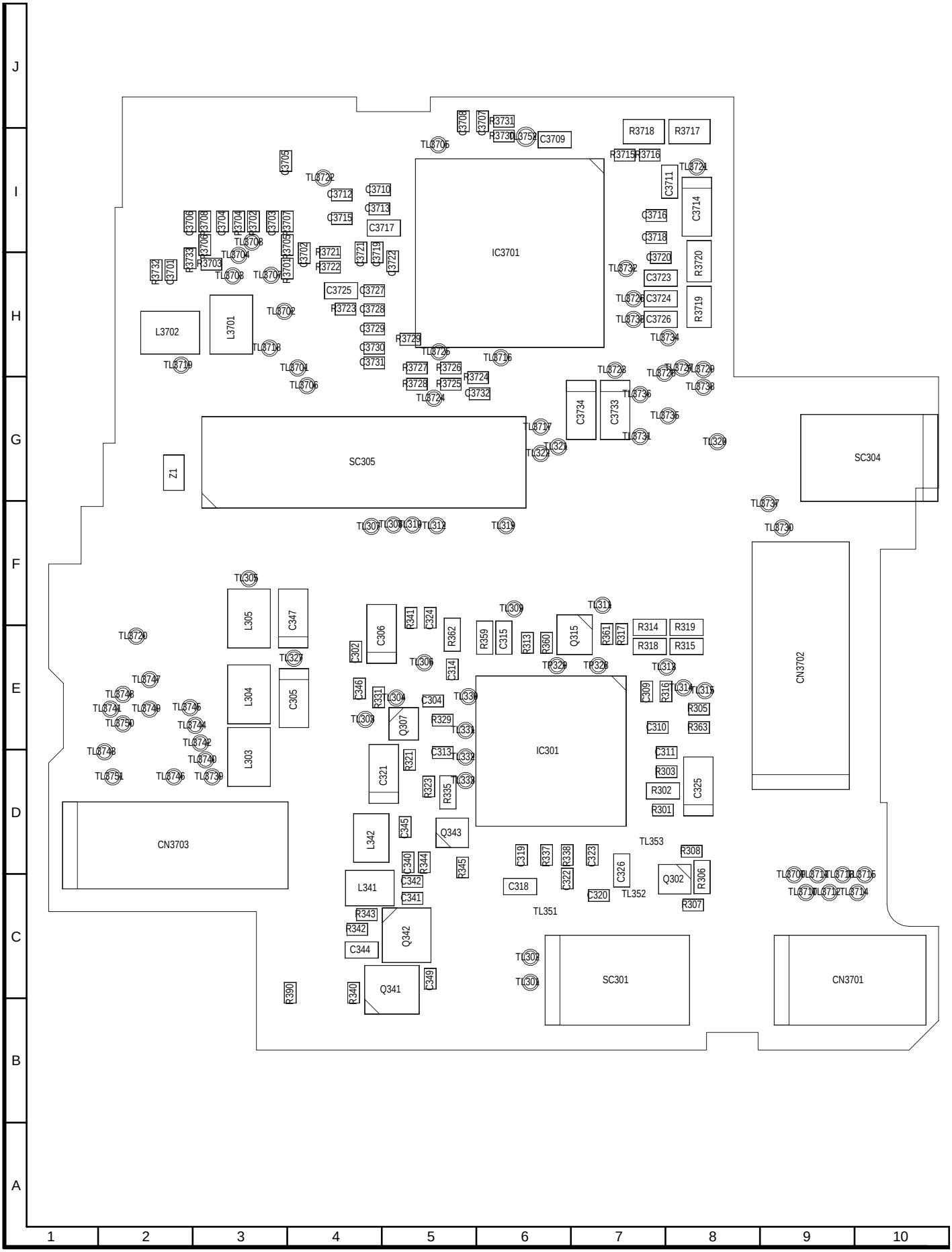
## CAMERA PWB Component Side SIDE B



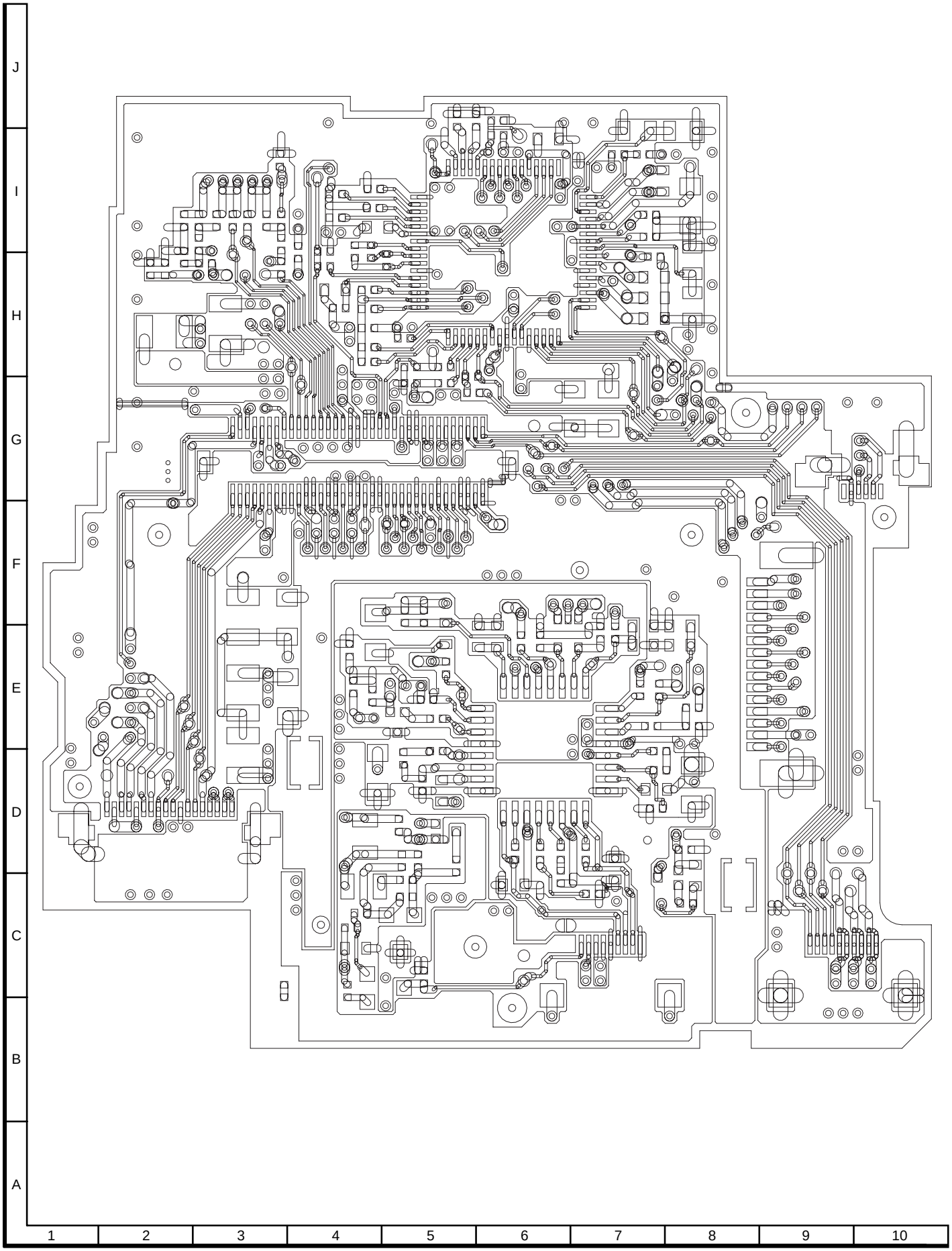
## CAMERA PWB Wiring Side SIDE B



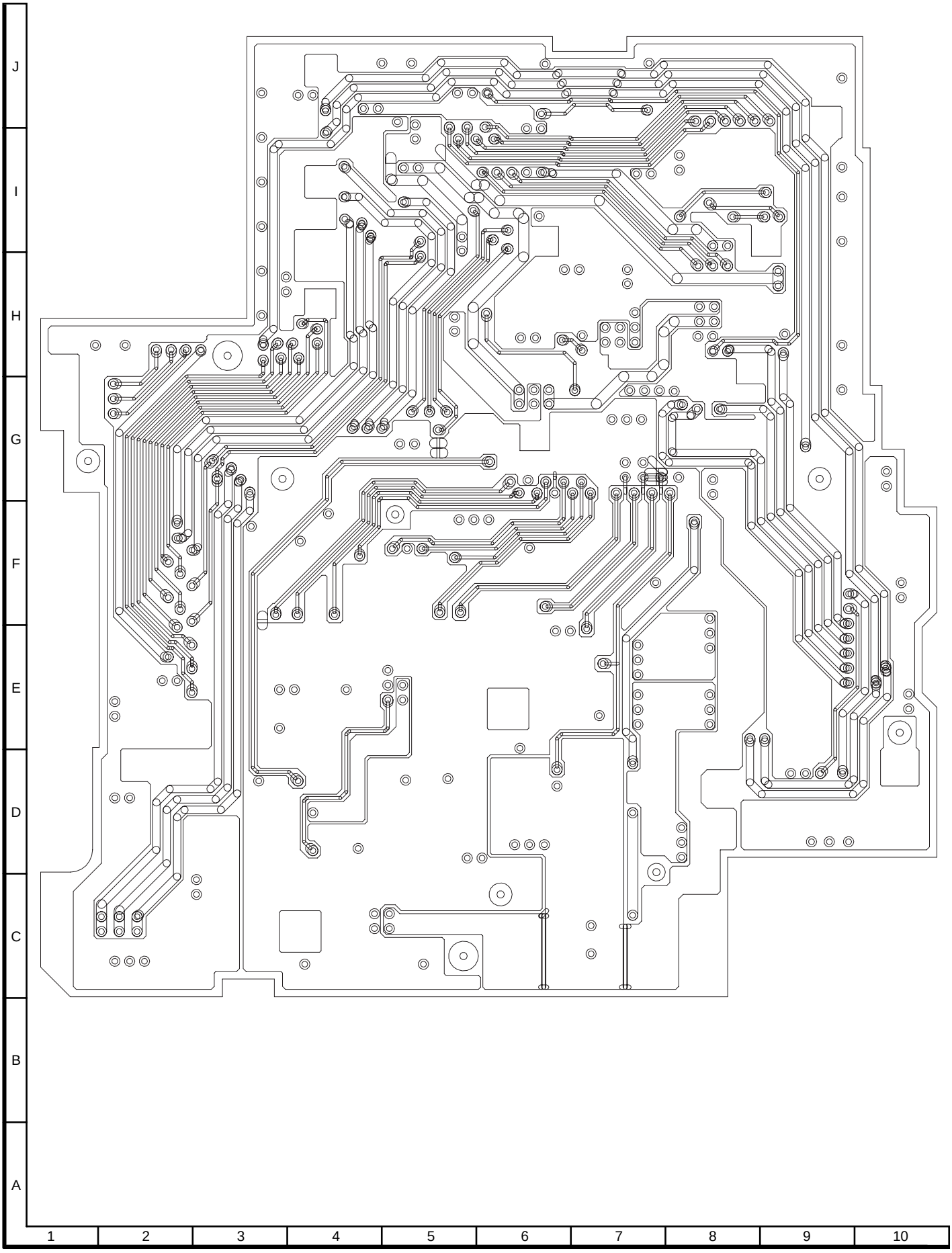
## HEAD AMP PWB Component Side SIDE A



## HEAD AMP PWB Wiring Side SIDE A



## HEAD AMP PWB Wiring Side SIDE B



# 10. REPLACEMENT PARTS LIST/ EXPLODED VIEWS

### ELECTRICAL PARTS LIST

Parts marked with "⚠" are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

Les pièces marquéss "⚠" sont importantes pour maintenir la sècurité de l'appareil. Ne remplacer ces pieces que par des pièces dont le numéro est spécifié pour maintenir la sécurité et protéger le bon fonctinnement de l'appareil.

### " HOW TO ORDER REPLACEMENT PARTS"

in USA: Contact your nearest SHARP Parts Distributor. For location of SHARP Parts Distributor,
Call Toll-free 1-IBE800-SHARP

in CANADA: Contact SHARP Electronics of Canada Limited
Phone (416) 890-2100.

★MARK : SPARE PARTS-DELIVERY SECTION:ALL JAPAN

To have your order filled promptly and correctly, please furnish the following informations.

**1. MODEL NUMBER** **2. REF. NO.**
**3. PART NO.** **4. DESCRIPTION**
**5. PRICE CODE**

**⚠ MARK: SAFETY RELATED PARTS**
**⚠ PIECES: RELATIVES A LA SECURITE**

**PWB ASSEMBLY IS NOT REPLACEMENT ITEM**
**L'ASSEMBLANGE P.C.I. EST UN ARTICLE NON REMPLACABLE**

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|

## PRINTED WIRING BOARD ASSEMBLIES
## *(NOT REPLACEMENT ITEM)*

| | | |
|---|---|---|
| DUNTK2949QA02 | VCR Unit(VL-AH160U) | — |
| DUNTK2949QA04 | VCR Unit(VL-AH150U/UC) | — |
| DUNTK2934QA00 | CAMERA Unit | — |
| DUNTK2936QA00 | HEAD AMP Unit | — |
| DUNTK2800PM03 | CCD Unit | — |

### TUNER AND ASSEMBLY UNITS

| | | |
|---|---|---|
| RUNTK0352TAZZ | AV Jack Unit | AS |
| RUNTK0354TAZZ | Lithium Battery Unit | AF |
| RUNTK0356TAZZ | 6-cell Detection Unit | AG |
| RUNTK0404TAZZ | VCR Operation SW Unit | AT |

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|

## DUNTK2949QA02(VL-AH160U)
## DUNTK2949QA04(VL-AH150U/UC)
## VCR UNIT

### INTEGRATED CIRCUITS

| | | | |
|---|---|---|---|
| IC151 | VHiCXD2310A-1 | CXD2310A, A/D Converter | AV |
| IC201 | RH-iX0738TAZZ | IX0738TA | AV |
| IC202 | RH-iX0770TAZZ | IX0770TA | AW |
| IC401 | RH-iX0788TAZZ | IX0788TA, Integrated DSP | BB |
| IC601 | VHiLA7458W/-1 | LA7458W, Sig Process | AT |
| IC701 | VHiS81330HG-1 | S81330HG, 3V REG | AF |
| IC702 | VHiRN5VD25A-1 | RN5VD25A, 2.5V DET | AE |
| IC704 | VHiRS5C313/-1 | RS5C313, Clock | AL |
| IC705 | VHiM24C08W6-1 | M24C08W6, $E^2$PROM | AH |
| IC706 | RH-iX0888TAZZQ | IX0888TA, System/Servo Control | BC |
| IC707 | RH-iX0768TAZZ | IX0768TA, OSD.IC | AP |
| IC708 | VHiTA75S01F-1 | TA75S01F, Amp | AD |
| IC710 | VHiBU4053V/-1 | BU4053V | AE |
| IC712 | VHiTC7W74U/-1 | TC7W74U | AD |
| IC800 | VHiMM1323XV-1 | MM1323XV, LCD Interface | AN |
| IC900 | VHiMB3881++-1 | MB3881++, Power Control IC | AT |
| IC902 | VHiBU4051FV-1 | BU4051FV, Multiplexer | AF |
| IC903 | VHiNJM2904M-1 | NJM2904M, 3.1V/2.5V Error Amp | AE |
| IC904 | VHiTA75S01F-1 | TA75S01F, Amp | AD |
| IC1451 | VHiTK15440M-1 | TK15440M, Driver | AF |
| IC2701 | VHiMB88344F-1 | MB88344F, D/A Converter | AV |
| IC2901 | VHiMM1332GF-1 | MM1332GF, Charge Control | AH |
| IC2902 | VHiNJU7012F-1 | NJU7012F, Over Current Detector | AE |
| IC3800 | VHiNJM2107F-1 | NJM2107F, AFC LPF | AE |
| IC3801 | VHiLZ9GH16/-1 | LZ9GH16, LCD Controler (AH150U/UC) | AP |
| IC3801 | VHiLZ9GH17/-1 | LZ9GH17, LCD Controler (AH160U) | AP |

### TRANSISTORS

| | | | |
|---|---|---|---|
| Q403 | VS2SA1873Y/-1 | 2SA1873Y | AC |
| Q406 | VS2SA1989R/-1 | 2SA1989R | AB |
| Q407 | VS2SA1989R/-1 | 2SA1989R | AB |
| Q409 | VSHN1B04FU/-1 | HN1B04FU | AC |
| Q410 | VS2SA1989R/-1 | 2SA1989R | AB |
| Q601 | VS2SA1362GR-1 | 2SA1362GR | AC |
| Q602 | VSRT1N441U/-1 | RT1N441U | AB |
| Q603 | VS2SC5383F/-1 | 2SC5383F | AB |
| Q704 | VSHN1B04FU/-1 | HN1B04FU | AC |
| Q705 | VSHN2C01FU/-1 | HN2C01FU | AC |
| Q707 | VSHN1C01FU/-1 | HN1C01FU | AC |
| Q708 | VSRN2904///-1 | RN2904 | AC |
| Q709 | VSHN1C01FU/-1 | HN1C01FU | AC |
| Q901 | VS2SA2010//-1 | 2SA2010 | AD |
| Q903 | VS2SA1989R/-1 | 2SA1989R | AB |
| Q904 | VS2SA1362GR-1 | 2SA1362GR | AC |
| Q905 | VS2SA1989R/-1 | 2SA1989R | AB |
| Q906 | VS2SA2010//-1 | 2SA2010 | AD |
| Q908 | VS2SA1362GR-1 | 2SA1362GR | AC |
| Q911 | VSCPH3215++-1 | CPH3215++ | AD |
| Q912 | VS2SA1989R/-1 | 2SA1989R | AB |
| Q913 | VSRT1N441U/-1 | RT1N441U | AB |
| Q914 | VSRT1N441U/-1 | RT1N441U | AB |
| Q916 | VSRN4983///-1 | RN4983 | AC |
| Q917 | VSRN4983///-1 | RN4983 | AC |
| Q918 | VSRN4983///-1 | RN4983 | AC |
| Q919 | VSCPH6702++-1 | CPH6702++ | AD |
| Q921 | VSCPH6702++-1 | CPH6702++ | AD |
| Q922 | VSCPH6702++-1 | CPH6702++ | AD |
| Q925 | VS2SA2010//-1 | 2SA2010 | AD |
| Q926 | VS2SC5383F/-1 | 2SC5383F | AB |
| Q928 | VS2SB1121T/-1 | 2SB1121T | AC |
| Q932 | VSRN1902///-1 | RN1902 | AC |
| Q933 | VSRN1902///-1 | RN1902 | AC |
| Q934 | VS2SC3440++-1 | 2SC3440++ | AC |
| Q935 | VSRN2903///-1 | RN2903 | AC |

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| Q936 | VS2SA1362GR-1 | | 2SA1362GR | AC |
| Q937 | VS2SC5383F/-1 | | 2SC5383F | AB |
| Q938 | VS2SA1362GR-1 | | 2SA1362GR | AC |
| Q939 | VS2SC5383F/-1 | | 2SC5383F | AB |
| Q940 | VSRN4983///-1 | | RN4983 | AC |
| Q941 | VS2SC5383F/-1 | | 2SC5383F | AB |
| Q1401 | VS2SA1989R/-1 | | 2SA1989R | AB |
| Q1402 | VS2SA1989R/-1 | | 2SA1989R | AB |
| Q1403 | VS2SA1989R/-1 | | 2SA1989R | AB |
| Q1404 | VS2SA1989R/-1 | | 2SA1989R | AB |
| Q1406 | VS2SC5384C/-1 | | 2SC5384C | AB |
| Q1451 | VSRT1N141U/-1 | | RT1N141U | AB |
| Q1800 | VS3LN01S///-1 | | 3LN01S | AC |
| Q1801 | VSHN1B04FU/-1 | | HN1B04FU | AC |
| Q1802 | VSHN1B04FU/-1 | | HN1B04FU | AC |
| Q2401 | VSHN2C01FU/-1 | | HN2C01FU | AC |
| Q2402 | VS2SA1873Y/-1 | | 2SA1873Y | AC |
| Q2403 | VS2SC4944Y/-1 | | 2SC4944Y | AC |
| Q2405 | VSHN1B04FU/-1 | | HN1B04FU | AC |
| Q2406 | VSRT1N141U/-1 | | RT1N141U | AB |
| Q2407 | VS2SA1989R/-1 | | 2SA1989R | AB |
| Q2408 | VS2SC5383F/-1 | | 2SC5383F | AB |
| Q2901 | VSCPH6303++-1 | | CPH6303++ | AE |
| Q2903 | VSFTS1001//-1 | | FTS1001 | AG |
| Q2905 | VS2SB1205S/-1 | | 2SB1205S | AE |
| Q2906 | VSRN1902///-1 | | RN1902 | AC |
| Q2907 | VSRN1902///-1 | | RN1902 | AC |
| Q2910 | VSRN4983///-1 | | RN4983 | AC |
| Q2911 | VS2SB1121T/-1 | | 2SB1121T | AC |
| Q2912 | VSRT1N141U/-1 | | RT1N141U | AB |
| Q2913 | VS2SA1989R/-1 | | 2SA1989R | AB |
| Q2914 | VSHN1B04FU/-1 | | HN1B04FU | AC |
| Q2915 | VSRT1N241U/-1 | | RT1N241U | AB |
| Q3601 | VSRT1N441U/-1 | | RT1N441U | AB |
| Q3602 | VSRN4983///-1 | | RN4983 | AC |
| Q3801 | VSRT1N141U/-1 | | RT1N141U | AB |
| Q4401 | VS2SA1989R/-1 | | 2SA1989R | AB |
| Q6401 | VSHN2C01FU/-1 | | HN2C01FU | AC |
| Q6402 | VSHN2C01FU/-1 | | HN2C01FU | AC |
| Q6404 | VS2SC5383F/-1 | | 2SC5383F | AB |
| Q6451 | VS2SC5383F/-1 | | 2SC5383F | AB |
| Q7401 | VSHN1B04FU/-1 | | HN1B04FU | AC |
| Q7403 | VSRN4983///-1 | | RN4983 | AC |
| Q7404 | VSHN2C01FU/-1 | | HN2C01FU | AC |
| Q7406 | VS2SA1989R/-1 | | 2SA1989R | AB |
| Q7407 | VS2SC5384C/-1 | | 2SC5384C | AB |
| Q7408 | VS2SC5383F/-1 | | 2SC5383F | AB |
| Q7409 | VS2SA1989R/-1 | | 2SA1989R | AB |
| Q7410 | VSRT1N241U/-1 | | RT1N241U | AB |
| Q7451 | VS2SC5384C/-1 | | 2SC5384C | AB |
| Q7452 | VS2SC5384C/-1 | | 2SC5384C | AB |
| Q7453 | VSRT1N241U/-1 | | RT1N241U | AB |
| Q7454 | VSRN4983///-1 | | RN4983 | AC |
| Q7455 | VSHN1B04FU/-1 | | HN1B04FU | AC |
| Q8401 | VS2SA1989R/-1 | | 2SA1989R | AB |
| Q8402 | VS2SC5384C/-1 | | 2SC5384C | AB |
| Q8404 | VS2SC5384C/-1 | | 2SC5384C | AB |
| Q8405 | VS2SC5383F/-1 | | 2SC5383F | AB |
| Q8406 | VS2SA1989R/-1 | | 2SA1989R | AB |
| Q8407 | VSRT1N241U/-1 | | RT1N241U | AB |
| Q8451 | VSHN1C01FU/-1 | | HN1C01FU | AC |
| Q8452 | VSHN1C01FU/-1 | | HN1C01FU | AC |
| Q8453 | VSRT1P140U/-1 | | RT1P140U | AB |
| | | | **DIODES** | |
| D601 | VHDMA132K//-1 | | MA132K | AA |
| D701 | VHD1SS355//-1 | | 1SS355 | AB |
| D702 | RH-DX0182TAZZ | | DX0182TA | AD |
| D703 | VHDMA132K//-1 | | MA132K | AA |
| D704 | RH-DX0182TAZZ | | DX0182TA | AD |
| D900 | VHDF1J2H///-1 | | F1J2H | AD |
| D901 | VHDFS1J3///-1 | | FS1J3 | AD |
| D902 | VHDFS1J3///-1 | | FS1J3 | AD |
| D903 | VHD1SS355//-1 | | 1SS355 | AB |
| D904 | VHDF02J9///-1 | | F02J9 | AD |

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| D905 | VHDDA227///-1 | | DA227 | AB |
| D906 | VHDF02J9///-1 | | F02J9 | AD |
| D913 | VHDF1J2H///-1 | | F1J2H | AD |
| D914 | VHDF1J2H///-1 | | F1J2H | AD |
| D1451 | VHDMA133///-1 | | MA133 | AB |
| D1802 | RH-EX1399CEZZ | | Zener, EX1399CE | AB |
| D1901 | VHDMA2S111/-1 | | MA2S111 | AC |
| D2909 | RH-EX0187TAZZ | | Zener, EX0187TA | AC |
| D2910 | VHDF1J2H///-1 | | F1J2H | AD |
| D2912 | VHDBAS316//-1 | | BAS316 | AB |
| D2913 | VHDF1J2H///-1 | | F1J2H | AD |
| D2914 | VHD1SS355//-1 | | 1SS355 | AB |
| D3800 | VHDHVC359TR-1 | | HVC359TR | AD |
| | | | **PACKAGED CIRCUITS** | |
| TH3800 | VHHT1103K44-1 | | Thermistor | AD |
| X701 | RCRSC0170TAZZ | | Crystal, CRSC0170TA | AG |
| X702 | RCRSC0032TAZZ | | Crystal, CRSC0032TA | AG |
| | | | **COILS AND TRANSFORMER** | |
| L151 | VPBWM100KR50N | | Peaking, 10µH | AC |
| L152 | VPBWM470K2R6N | | Peaking, 47µH | AC |
| L201 | VPCCM100KR22N | | Peaking, 10µH | AB |
| L202 | VPD9M100KR86N | | Peaking, 10µH | AC |
| L401 | VPD9M100KR86N | | Peaking, 10µH | AC |
| L402 | VPD9M470K4R1N | | Peaking, 47µH | AC |
| L404 | VPD9M470K4R1N | | Peaking, 47µH | AC |
| L405 | VPD9M470K4R1N | | Peaking, 47µH | AC |
| L406 | VPD9M470K4R1N | | Peaking, 47µH | AC |
| L407 | VPD9M6R8J1R8N | | Peaking, 6.8µH | AC |
| L601 | VPCQM101K4R3N | | Peaking, 100µH | AB |
| L602 | VPCCM101K2R1N | | Peaking, 100µH | AC |
| L603 | VPCQM220K1R0N | | Peaking, 22µH | AB |
| L701 | VPCCM4R7MR13N | | Peaking, 4.7µH | AB |
| L702 | VPCCM4R7MR13N | | Peaking, 4.7µH | AB |
| L800 | VPD9M100J1R7N | | Peaking, 10µH | AC |
| L801 | VPD9M470J6R6N | | Peaking, 47µH | AC |
| L900 | RCiLP0344TAZZ | | Coil, 4.7µH | AD |
| L901 | RCiLP0343TAZZ | | Coil, 10µH | AD |
| L902 | RCiLP0271TAZZ | | Coil, 33µH | AE |
| L903 | VPCCM2R2MR09N | | Peaking, 2.2µH | AC |
| L904 | VPCCM2R2MR09N | | Peaking, 2.2µH | AC |
| L905 | RCiLP0344TAZZ | | Coil, 4.7µH | AD |
| L906 | RCiLP0271TAZZ | | Coil, 33µH | AE |
| L907 | RCiLP0271TAZZ | | Coil, 33µH | AE |
| L908 | VPCQM100KR41N | | Peaking, 10µH | AC |
| L909 | VPD9M100KR86N | | Peaking, 10µH | AC |
| L910 | RCiLP0344TAZZ | | Coil, 4.7µH | AD |
| L911 | VPD9M100KR86N | | Peaking, 10µH | AC |
| L912 | VPD9M121J140N | | Peaking, 120µH | AC |
| L913 | VPD9M220K2R0N | | Peaking, 22µH | AC |
| L914 | VPD9M100KR86N | | Peaking, 10µH | AC |
| L915 | VPD9M100KR86N | | Peaking, 10µH | AC |
| L917 | RCiLP0344TAZZ | | Coil, 4.7µH | AD |
| L918 | RCiLP0287TAZZ | | Coil, 47µH | AD |
| L919 | VPCCM2R2MR09N | | Peaking, 2.2µH | AC |
| L920 | RCiLP0344TAZZ | | Coil, 4.7µH | AD |
| L921 | RCiLP0271TAZZ | | Coil, 33µH | AE |
| L922 | RCiLP0271TAZZ | | Coil, 33µH | AE |
| L923 | RCiLP0344TAZZ | | Coil, 4.7µH | AD |
| L924 | RCiLP0343TAZZ | | Coil, 10µH | AD |
| L925 | RCiLP0343TAZZ | | Coil, 10µH | AD |
| L926 | VPCCM2R2MR09N | | Peaking, 2.2µH | AC |
| L927 | VPCQM2R2MR15N | | Peaking, 2.2µH | AC |
| L928 | RCiLP0344TAZZ | | Coil, 4.7µH | AD |
| L929 | RCiLP0343TAZZ | | Coil, 10µH | AD |
| L930 | RCiLP0344TAZZ | | Coil, 4.7µH | AD |
| L931 | RCiLP0343TAZZ | | Coil, 10µH | AD |
| L1401 | VPD9M2R7J1R0N | | Peaking, 2.7µH | AC |
| L1402 | VPD9M1R0JR57N | | Peaking, 1µH | AB |
| L1451 | VPD9M220K2R0N | | Peaking, 22µH | AC |
| L1452 | VPD9M100KR86N | | Peaking, 10µH | AC |
| L1453 | VPD9M120J1R9N | | Peaking, 12µH | AB |
| L3801 | VPD9M150J2R2N | | Peaking, 15µH (AH160U) | AC |

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| L3801 | VPD9M220J2R7N | | Peaking, 22µH (AH150U/UC) | AC |
| L3802 | VPD9M100J1R7N | | Peaking, 10µH | AC |
| L6401 | VPD9M820J9R5N | | Peaking, 82µH | AC |
| L6402 | VPBBM331J260N | | Peaking, 330µH | AB |
| L6403 | VPD9M680J8R6N | | Peaking, 68µH | AC |
| L7401 | VPD9M1R0JR57N | | Peaking, 1µH | AB |
| L7402 | VPD9M180J2R4N | | Peaking, 18µH | AC |
| L7403 | VPD9M470J6R6N | | Peaking, 47µH | AC |
| L7404 | VPBBM471J310N | | Peaking, 470µH | AB |
| L7405 | VPD9M181J190N | | Peaking, 180µH | AC |
| L7406 | VPBBM331J260N | | Peaking, 330µH | AB |
| L7407 | VPD9M330J3R6N | | Peaking, 33µH | AC |
| L7408 | VPBBM331J260N | | Peaking, 330µH | AB |
| L7452 | VPD9M8R2J2R0N | | Peaking, 8.2µH | AC |
| L7453 | VPD9M8R2J2R0N | | Peaking, 8.2µH | AC |
| L8401 | VPD9M1R8JR84N | | Peaking, 1.8µH | AC |
| L8402 | VPD9M2R2JR96N | | Peaking, 2.2µH | AC |
| L8404 | VPD9M221J210N | | Peaking, 220µH | AB |
| L8405 | VP-1M391J330N | | Peaking, 390µH | AB |
| L8451 | VPD9M820J9R5N | | Peaking, 82µH | AC |
| L8452 | VPD9M221J210N | | Peaking, 220µH | AB |
| ⚠ T901 | RTRNZ0154TAZZ | | Power Transformer | AF |

## CAPACITORS

| | | | | | |
|---|---|---|---|---|---|
| C151 | VCSATA1AJ106M | 10 | 10V | Tantalum | AC |
| C152 | VCKYCZ1AF104Z | 0.1 | 10V | Ceramic | AB |
| C153 | VCSATA1AJ106M | 10 | 10V | Tantalum | AC |
| C154 | VCSATA1AJ106M | 10 | 10V | Tantalum | AC |
| C155 | VCKYCZ1AF104Z | 0.1 | 10V | Ceramic | AB |
| C156 | VCKYCZ1AF104Z | 0.1 | 10V | Ceramic | AB |
| C158 | VCKYCZ1HB471K | 470p | 50V | Ceramic | AB |
| C159 | VCKYCZ1AF104Z | 0.1 | 10V | Ceramic | AB |
| C161 | VCKYCZ1HF103Z | 0.01 | 50V | Ceramic | AB |
| C162 | VCSATA0JJ156M | 15 | 6.3V | Tantalum | AC |
| C163 | VCKYCZ1HF103Z | 0.01 | 50V | Ceramic | AB |
| C164 | VCKYCZ1HF103Z | 0.01 | 50V | Ceramic | AB |
| C201 | VCKYTV1AB105K | 1 | 10V | Ceramic | AD |
| C202 | VCSATA0JJ156M | 15 | 6.3V | Tantalum | AC |
| C203 | VCKYCZ1HF103Z | 0.01 | 50V | Ceramic | AB |
| C204 | VCKYCZ1HF103Z | 0.01 | 50V | Ceramic | AB |
| C205 | VCKYCZ1HF103Z | 0.01 | 50V | Ceramic | AB |
| C206 | VCKYCZ1AF104Z | 0.1 | 10V | Ceramic | AB |
| C207 | VCKYCZ1AF104Z | 0.1 | 10V | Ceramic | AB |
| C208 | VCKYCZ1HF103Z | 0.01 | 50V | Ceramic | AB |
| C209 | VCKYCZ1HF103Z | 0.01 | 50V | Ceramic | AB |
| C210 | VCKYCZ1AF104Z | 0.1 | 10V | Ceramic | AB |
| C211 | VCKYTV1AB105K | 1 | 10V | Ceramic | AD |
| C212 | VCKYCZ1HF103Z | 0.01 | 50V | Ceramic | AB |
| C213 | VCSATA0JJ156M | 15 | 6.3V | Tantalum | AC |
| C403 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | AB |
| C404 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | AB |
| C405 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | AB |
| C406 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | AB |
| C407 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | AB |
| C408 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | AB |
| C409 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | AB |
| C411 | VCSATA0JJ106M | 10 | 6.3V | Tantalum | AD |
| C412 | VCSATA0JJ106M | 10 | 6.3V | Tantalum | AD |
| C414 | VCKYCZ1HF103Z | 0.01 | 50V | Ceramic | AB |
| C415 | VCKYCZ1HF103Z | 0.01 | 50V | Ceramic | AB |
| C416 | VCKYCZ1HF103Z | 0.01 | 50V | Ceramic | AB |
| C419 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | AB |
| C421 | VCSATA0JJ106M | 10 | 6.3V | Tantalum | AD |
| C422 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | AB |
| C425 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | AB |
| C426 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | AB |
| C429 | VCKYCZ1HF103Z | 0.01 | 50V | Ceramic | AB |
| C430 | VCKYCZ1HF103Z | 0.01 | 50V | Ceramic | AB |
| C432 | VCKYCZ1HF103Z | 0.01 | 50V | Ceramic | AB |
| C434 | VCKYCZ1HF103Z | 0.01 | 50V | Ceramic | AB |
| C436 | VCKYCZ1HF103Z | 0.01 | 50V | Ceramic | AB |
| C437 | VCKYCZ1HF103Z | 0.01 | 50V | Ceramic | AB |
| C439 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | AB |
| C440 | VCKYCY0JB105K | 1 | 6.3V | Ceramic | AC |
| C441 | VCKYCZ1AB104K | 0.1 | 10V | Ceramic | AB |
| C442 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | AB |
| C443 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | AB |
| C445 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | AB |
| C446 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | AB |
| C447 | VCKYCZ1AB104K | 0.1 | 10V | Ceramic | AB |
| C448 | VCSATA0JJ106M | 10 | 6.3V | Tantalum | AD |
| C449 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | AB |
| C455 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | AB |
| C456 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | AB |
| C457 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | AB |
| C458 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | AB |
| C460 | VCKYCY0JB105K | 1 | 6.3V | Ceramic | AC |
| C461 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | AB |
| C462 | VCSATA1AJ106M | 10 | 10V | Tantalum | AC |
| C463 | VCKYCZ1AB104K | 0.1 | 10V | Ceramic | AB |
| C464 | VCKYCZ1AB104K | 0.1 | 10V | Ceramic | AB |
| C465 | VCKYCZ1HB271K | 270p | 50V | Ceramic | AC |
| C466 | VCKYCZ1AB104K | 0.1 | 10V | Ceramic | AB |
| C467 | VCKYCZ1AB104K | 0.1 | 10V | Ceramic | AB |
| C469 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | AB |
| C471 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | AB |
| C472 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | AB |
| C473 | VCCCCZ1HH151J | 150p | 50V | Ceramic | AB |
| C475 | VCSATA0JJ106M | 10 | 6.3V | Tantalum | AD |
| C601 | VCSATA1CJ225M | 2.2 | 16V | Tantalum | AC |
| C602 | VCKYTV1CF225Z | 2.2 | 16V | Ceramic | AC |
| C603 | VCEAPF0JW476M | 47 | 6.3V | Electrolytic | AB |
| C604 | VCSATE1AJ476M | 47 | 10V | Tantalum | AD |
| C605 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | AB |
| C606 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | AB |
| C607 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | AB |
| C608 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | AB |
| C609 | VCKYCY1CF334Z | 0.33 | 16V | Ceramic | AA |
| C610 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | AB |
| C611 | VCEAPF0JW226M | 22 | 6.3V | Electrolytic | AB |
| C612 | VCEAPH1HW474M | 0.47 | 50V | Electrolytic | AB |
| C613 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | AB |
| C614 | VCKYCZ1CB223K | 0.022 | 16V | Ceramic | AC |
| C615 | VCEAPH1HW105M | 1 | 50V | Electrolytic | AB |
| C616 | VCKYCZ1HB102K | 1000p | 50V | Ceramic | AB |
| C617 | VCEAPF0JW336M | 33 | 6.3V | Electrolytic | AB |
| C618 | VCKYCY0JB105K | 1 | 6.3V | Ceramic | AC |
| C619 | VCSATA1DJ475M | 4.7 | 20V | Tantalum | AC |
| C620 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | AB |
| C621 | VCSATA1DJ475M | 4.7 | 20V | Tantalum | AC |
| C622 | VCSAPD1DJ474M | 0.47 | 20V | Tantalum | AD |
| C623 | VCSATA0JJ106M | 10 | 6.3V | Tantalum | AD |
| C624 | VCEAPF0JW476M | 47 | 6.3V | Electrolytic | AB |
| C625 | VCSATA1DJ475M | 4.7 | 20V | Tantalum | AC |
| C626 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | AB |
| C627 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | AB |
| C628 | VCKYCZ1EB682K | 6800p | 25V | Ceramic | AB |
| C629 | VCKYCZ1HB332K | 3300p | 50V | Ceramic | AA |
| C630 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | AB |
| C631 | VCSAPD1CJ105M | 1 | 16V | Tantalum | AC |
| C632 | VCKYCZ1HB222K | 2200p | 50V | Ceramic | AB |
| C633 | VCKYCZ1AB104K | 0.1 | 10V | Ceramic | AB |
| C634 | VCKYCZ1AB104K | 0.1 | 10V | Ceramic | AB |
| C635 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | AB |
| C636 | VCSAPD1CJ105M | 1 | 16V | Tantalum | AC |
| C637 | VCSATE1AJ476M | 47 | 10V | Tantalum | AD |
| C638 | VCKYCZ1CB223K | 0.022 | 16V | Ceramic | AC |
| C641 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | AB |
| C701 | VCKYCZ1HB102K | 1000p | 50V | Ceramic | AB |
| C702 | VCKYCZ1HB102K | 1000p | 50V | Ceramic | AB |
| C703 | VCKYCZ1HB102K | 1000p | 50V | Ceramic | AB |
| C704 | VCKYCZ1HB102K | 1000p | 50V | Ceramic | AB |
| C705 | VCKYCZ1HB102K | 1000p | 50V | Ceramic | AB |
| C706 | VCKYCZ1HB102K | 1000p | 50V | Ceramic | AB |
| C707 | VCKYCZ1HB102K | 1000p | 50V | Ceramic | AB |
| C708 | VCKYCZ1AB104K | 0.1 | 10V | Ceramic | AB |
| C709 | RC-KZ0052TAZZ | 4.7 | 16V | Ceramic | AC |
| C711 | VCKYCY1AF105Z | 1 | 10V | Ceramic | AC |
| C712 | VCCCCZ1HH220J | 22p | 50V | Ceramic | AB |

| Ref. No. | Part No. | ★ | Description | | | Code |
|---|---|---|---|---|---|---|
| C713 | VCCCCZ1HH180J | | 18p | 50V | Ceramic | AB |
| C714 | VCKYCZ1HF103Z | | 0.01 | 50V | Ceramic | AB |
| C715 | VCKYCZ1HB102K | | 1000p | 50V | Ceramic | AB |
| C716 | VCSATA1AJ106M | | 10 | 10V | Tantalum | AC |
| C717 | VCKYCZ1AB104K | | 0.1 | 10V | Ceramic | AB |
| C718 | VCKYCZ1AB104K | | 0.1 | 10V | Ceramic | AB |
| C720 | VCKYCZ1AB104K | | 0.1 | 10V | Ceramic | AB |
| C721 | VCCCCZ1HH330J | | 33p | 50V | Ceramic | AB |
| C722 | VCKYCZ1AB104K | | 0.1 | 10V | Ceramic | AB |
| C724 | VCKYCZ1AB104K | | 0.1 | 10V | Ceramic | AB |
| C725 | VCKYCZ1AB104K | | 0.1 | 10V | Ceramic | AB |
| C726 | VCKYCZ1HB471K | | 470p | 50V | Ceramic | AB |
| C727 | VCKYCZ1HF103Z | | 0.01 | 50V | Ceramic | AB |
| C728 | VCKYCZ1HF103Z | | 0.01 | 50V | Ceramic | AB |
| C729 | VCKYCZ1AB104K | | 0.1 | 10V | Ceramic | AB |
| C730 | VCKYCZ1AB104K | | 0.1 | 10V | Ceramic | AB |
| C731 | VCKYCZ1HF103Z | | 0.01 | 50V | Ceramic | AB |
| C732 | VCSATA1AJ106M | | 10 | 10V | Tantalum | AC |
| C733 | VCKYCY1AF105Z | | 1 | 10V | Ceramic | AC |
| C737 | VCKYCZ1AB104K | | 0.1 | 10V | Ceramic | AB |
| C738 | VCKYCZ1AB104K | | 0.1 | 10V | Ceramic | AB |
| C750 | VCKYCY0JB105K | | 1 | 6.3V | Ceramic | AC |
| C800 | VCKYTQ1CB105K | | 1 | 16V | Ceramic | AC |
| C801 | VCKYTV1CB105K | | 1 | 16V | Ceramic | AC |
| C803 | VCKYCY0JB105K | | 1 | 6.3V | Ceramic | AC |
| C804 | VCKYCY0JB105K | | 1 | 6.3V | Ceramic | AC |
| C805 | VCKYCY0JB105K | | 1 | 6.3V | Ceramic | AC |
| C900 | RC-KZ0070TAZZ | | 4.7 | 16V | Ceramic | AD |
| C901 | RC-KZ0070TAZZ | | 4.7 | 16V | Ceramic | AD |
| C902 | RC-KZ0070TAZZ | | 4.7 | 16V | Ceramic | AD |
| C903 | RC-KZ0070TAZZ | | 4.7 | 16V | Ceramic | AD |
| C904 | RC-KZ0070TAZZ | | 4.7 | 16V | Ceramic | AD |
| C905 | RC-KZ0070TAZZ | | 4.7 | 16V | Ceramic | AD |
| C906 | RC-KZ0070TAZZ | | 4.7 | 16V | Ceramic | AD |
| C907 | RC-KZ0070TAZZ | | 4.7 | 16V | Ceramic | AD |
| C909 | VCKYCY0JB105K | | 1 | 6.3V | Ceramic | AC |
| C910 | VCKYTV1AB105K | | 1 | 10V | Ceramic | AD |
| C912 | RC-KZ0070TAZZ | | 4.7 | 16V | Ceramic | AD |
| C915 | VCKYCY0JB105K | | 1 | 6.3V | Ceramic | AC |
| C916 | RC-KZ0054TAZZ | | 2.2 | 16V | Ceramic | AD |
| C917 | RC-KZ0054TAZZ | | 2.2 | 16V | Ceramic | AD |
| C918 | RC-KZ0055TAZZ | | 3.3 | 16V | Ceramic | AD |
| C919 | RC-KZ0084TAZZ | | 1 | 25V | Ceramic | AC |
| C920 | RC-KZ0055TAZZ | | 3.3 | 16V | Ceramic | AD |
| C921 | RC-KZ0084TAZZ | | 1 | 25V | Ceramic | AC |
| C922 | RC-KZ0084TAZZ | | 1 | 25V | Ceramic | AC |
| C923 | VCKYTV1EB104K | | 0.1 | 25V | Ceramic | AB |
| C924 | VCKYTV1CF105Z | | 1 | 16V | Ceramic | AB |
| C925 | VCKYTV1CF105Z | | 1 | 16V | Ceramic | AB |
| C926 | VCKYTV1CF105Z | | 1 | 16V | Ceramic | AB |
| C927 | VCKYTV1EB104K | | 0.1 | 25V | Ceramic | AB |
| C930 | VCKYCZ1AB104K | | 0.1 | 10V | Ceramic | AB |
| C931 | RC-KZ0070TAZZ | | 4.7 | 16V | Ceramic | AD |
| C932 | RC-KZ0070TAZZ | | 4.7 | 16V | Ceramic | AD |
| C933 | RC-KZ0055TAZZ | | 3.3 | 10V | Ceramic | AD |
| C934 | RC-KZ0054TAZZ | | 2.2 | 16V | Ceramic | AD |
| C935 | RC-KZ0053TAZZ | | 10 | 10V | Ceramic | AD |
| C936 | RC-KZ0053TAZZ | | 10 | 10V | Ceramic | AD |
| C937 | RC-KZ0070TAZZ | | 4.7 | 16V | Ceramic | AD |
| C938 | RC-KZ0070TAZZ | | 4.7 | 16V | Ceramic | AD |
| C939 | RC-KZ0070TAZZ | | 4.7 | 16V | Ceramic | AD |
| C940 | RC-KZ0055TAZZ | | 3.3 | 10V | Ceramic | AD |
| C941 | RC-KZ0055TAZZ | | 3.3 | 10V | Ceramic | AD |
| C942 | RC-KZ0084TAZZ | | 1 | 25V | Ceramic | AC |
| C943 | RC-KZ0070TAZZ | | 4.7 | 16V | Ceramic | AD |
| C944 | VCKYCZ1CB103K | | 0.01 | 16V | Ceramic | AB |
| C945 | VCKYCY1EF104Z | | 0.1 | 25V | Ceramic | AA |
| C946 | RC-KZ0055TAZZ | | 3.3 | 10V | Ceramic | AD |
| C947 | RC-KZ0070TAZZ | | 4.7 | 16V | Ceramic | AD |
| C948 | RC-KZ0070TAZZ | | 4.7 | 16V | Ceramic | AD |
| C952 | VCKYCZ1AB104K | | 0.1 | 10V | Ceramic | AB |
| C953 | VCKYCZ1AB104K | | 0.1 | 10V | Ceramic | AB |
| C955 | VCKYCZ1AB104K | | 0.1 | 10V | Ceramic | AB |
| C956 | VCKYCZ1AB104K | | 0.1 | 10V | Ceramic | AB |
| C1401 | VCCCCZ1HH390J | | 39p | 50V | Ceramic | AB |
| C1405 | VCCCCZ1HH820J | | 82p | 50V | Ceramic | AB |
| C1406 | VCCCCZ1HH330J | | 33p | 50V | Ceramic | AB |
| C1407 | VCCCCZ1HH151J | | 150p | 50V | Ceramic | AB |
| C1408 | VCCCCZ1HH151J | | 150p | 50V | Ceramic | AB |
| C1415 | VCKYCZ1CB103K | | 0.01 | 16V | Ceramic | AB |
| C1416 | VCKYCZ1CB103K | | 0.01 | 16V | Ceramic | AB |
| C1451 | VCSATE1AJ476M | | 47 | 10V | Tantalum | AD |
| C1452 | VCSATE1AJ476M | | 47 | 10V | Tantalum | AD |
| C1453 | VCKYCZ1CB103K | | 0.01 | 16V | Ceramic | AB |
| C1454 | VCSATA0YJ106M | | 10 | | Tantalum | AC |
| C1456 | VCCCCZ1HH100D | | 10p | 50V | Ceramic | AB |
| C1458 | VCKYCZ1CB103K | | 0.01 | 16V | Ceramic | AB |
| C1459 | VCKYCZ1CB103K | | 0.01 | 16V | Ceramic | AB |
| C1801 | VCKYTV1EB104K | | 0.1 | 25V | Ceramic | AB |
| C1803 | VCKYCZ1HF103Z | | 0.01 | 50V | Ceramic | AB |
| C1805 | VCKYCZ1AF104Z | | 0.1 | 10V | Ceramic | AB |
| C1806 | VCKYCZ1HF103Z | | 0.01 | 50V | Ceramic | AB |
| C1808 | VCKYTV1EB104K | | 0.1 | 25V | Ceramic | AB |
| C1809 | VCKYCY0JB105K | | 1 | 6.3V | Ceramic | AC |
| C1810 | VCSATA1EJ105M | | 1 | 25V | Tantalum | AC |
| C1812 | VCKYCZ1HF103Z | | 0.01 | 50V | Ceramic | AB |
| C1813 | VCSATA1VJ105M | | 1 | 35V | Tantalum | AC |
| C1901 | VCKYCZ1HB102K | | 1000p | 50V | Ceramic | AB |
| C1902 | VCKYCZ1CB103K | | 0.01 | 16V | Ceramic | AB |
| C1903 | VCKYCZ1AB104K | | 0.1 | 10V | Ceramic | AB |
| C1904 | VCKYCZ1AB104K | | 0.1 | 10V | Ceramic | AB |
| C1907 | VCKYCZ1AB473K | | 0.047 | 10V | Ceramic | AB |
| C1908 | VCKYCZ1AB104K | | 0.1 | 10V | Ceramic | AB |
| C1909 | VCKYCZ1AB104K | | 0.1 | 10V | Ceramic | AB |
| C1910 | VCKYCZ1AB104K | | 0.1 | 10V | Ceramic | AB |
| C1911 | VCKYCZ1AB104K | | 0.1 | 10V | Ceramic | AB |
| C1912 | VCCCCZ1HH101J | | 100p | 50V | Ceramic | AB |
| C1913 | VCKYCY1AB224K | | 0.22 | 10V | Ceramic | AB |
| C1914 | VCKYCZ1HB102K | | 1000p | 50V | Ceramic | AB |
| C1915 | VCKYCZ1EB472K | | 4700p | 25V | Ceramic | AB |
| C1916 | VCKYCZ1AB104K | | 0.1 | 10V | Ceramic | AB |
| C1917 | VCKYCZ1AB104K | | 0.1 | 10V | Ceramic | AB |
| C1918 | VCKYCZ1AB104K | | 0.1 | 10V | Ceramic | AB |
| C1919 | VCKYCZ1AB104K | | 0.1 | 10V | Ceramic | AB |
| C1920 | VCKYCZ1HB152K | | 1500p | 50V | Ceramic | AB |
| C1921 | VCKYCZ1HB222K | | 2200p | 50V | Ceramic | AB |
| C1922 | VCKYCZ1HB561K | | 560p | 50V | Ceramic | AC |
| C1923 | VCKYCZ1HB102K | | 1000p | 50V | Ceramic | AB |
| C1924 | VCKYCZ1HB102K | | 1000p | 50V | Ceramic | AB |
| C1925 | VCKYCZ1HB332K | | 3300p | 50V | Ceramic | AA |
| C1926 | VCKYCZ1HB152K | | 1500p | 50V | Ceramic | AB |
| C1927 | VCKYCZ1HB102K | | 1000p | 50V | Ceramic | AB |
| C1928 | VCKYCZ1HB102K | | 1000p | 50V | Ceramic | AB |
| C1929 | VCKYCZ1HB271K | | 270p | 50V | Ceramic | AC |
| C2401 | VCCCCY1HH471J | | 470p | 50V | Ceramic | AA |
| C2402 | VCKYCZ1CB103K | | 0.01 | 16V | Ceramic | AB |
| C2403 | VCKYCZ1CB103K | | 0.01 | 16V | Ceramic | AB |
| C2404 | VCKYCY1CB104K | | 0.1 | 16V | Ceramic | AB |
| C2405 | VCKYCY1CB104K | | 0.1 | 16V | Ceramic | AB |
| C2406 | VCKYCZ1CB103K | | 0.01 | 16V | Ceramic | AB |
| C2407 | VCKYCZ1CB103K | | 0.01 | 16V | Ceramic | AB |
| C2408 | VCCCCZ1HH820J | | 82p | 50V | Ceramic | AB |
| C2409 | VCKYCY0JB105K | | 1 | 6.3V | Ceramic | AC |
| C2701 | VCKYCZ1AB104K | | 0.1 | 10V | Ceramic | AB |
| C2702 | VCKYCZ1AB104K | | 0.1 | 10V | Ceramic | AB |
| C2703 | VCKYCZ1AB104K | | 0.1 | 10V | Ceramic | AB |
| C2904 | VCKYTV1AB105K | | 1 | 10V | Ceramic | AD |
| C2906 | VCKYCZ1AB104K | | 0.1 | 10V | Ceramic | AB |
| C2907 | VCKYCY1CB104K | | 0.1 | 16V | Ceramic | AB |
| C2908 | VCKYCZ1AB104K | | 0.1 | 10V | Ceramic | AB |
| C2909 | VCKYCZ1AB104K | | 0.1 | 10V | Ceramic | AB |
| C2910 | VCKYCY1CB104K | | 0.1 | 16V | Ceramic | AB |
| C2911 | VCKYTV1AB105K | | 1 | 10V | Ceramic | AD |
| C3602 | VCKYCZ1HB102K | | 1000p | 50V | Ceramic | AB |
| C3800 | VCKYCZ1HB561K | | 560p | 50V | Ceramic | AC |
| C3801 | VCKYCZ1AB104K | | 0.1 | 10V | Ceramic | AB |
| C3803 | VCKYCZ1HB102K | | 1000p | 50V | Ceramic | AB |
| C3804 | VCKYTV1CB105K | | 1 | 16V | Ceramic | AC |
| C3805 | VCCCCZ1HH101J | | 100p (AH160U) | 50V | Ceramic | AB |

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| C3805 | VCCCCZ1HH151J | | 150p 50V Ceramic (AH150U/UC) | AB |
| C3806 | VCCCCZ1HH220J | | 22p 50V Ceramic | AB |
| C3807 | VCKYCZ1HB102K | | 1000p 50V Ceramic | AB |
| C3808 | VCCCCZ1HH560J | | 56p 50V Ceramic | AB |
| C3812 | VCKYCY1CF224Z | | 0.22 16V Ceramic | AA |
| C3813 | VCCCCZ1HH101J | | 100p 50V Ceramic | AB |
| C3814 | VCCCCZ1HH101J | | 100p 50V Ceramic | AB |
| C3815 | VCKYCZ1AB104K | | 0.1 10V Ceramic | AB |
| C3817 | VCKYCZ1AB104K | | 0.1 10V Ceramic | AB |
| C3819 | VCKYCZ1HF103Z | | 0.01 50V Ceramic | AB |
| C6402 | VCKYCZ1CB103K | | 0.01 16V Ceramic | AB |
| C6403 | VCKYCZ1CB103K | | 0.01 16V Ceramic | AB |
| C6404 | VCCCCY1HH561J | | 560p 50V Ceramic | AB |
| C6406 | VCCCCZ1HH121J | | 120p 50V Ceramic | AB |
| C6407 | VCKYCZ1AB104K | | 0.1 10V Ceramic | AB |
| C6408 | VCCCCZ1HH121J | | 120p 50V Ceramic | AB |
| C6409 | VCCCCZ1HH220J | | 22p 50V Ceramic | AB |
| C6410 | VCKYCZ1CB103K | | 0.01 16V Ceramic | AB |
| C6452 | VCKYCZ1CB103K | | 0.01 16V Ceramic | AB |
| C7401 | VCKYCZ1CB103K | | 0.01 16V Ceramic | AB |
| C7402 | VCCCCZ1HH150J | | 15p 50V Ceramic | AB |
| C7403 | VCCCCZ1HH270J | | 27p 50V Ceramic | AB |
| C7405 | VCKYCZ1CB103K | | 0.01 16V Ceramic | AB |
| C7407 | VCCCCZ1HH100D | | 10p 50V Ceramic | AB |
| C7408 | VCKYCZ1HB332K | | 3300p 50V Ceramic | AA |
| C7409 | VCKYCZ1CB103K | | 0.01 16V Ceramic | AB |
| C7410 | VCCCCY1HH271J | | 270p 50V Ceramic | AA |
| C7411 | VCCCCZ1HH360J | | 36p 50V Ceramic | AA |
| C7412 | VCCCCY1HH271J | | 270p 50V Ceramic | AA |
| C7413 | VCKYCY0JB105K | | 1 6.3V Ceramic | AC |
| C7414 | VCKYCZ1AB104K | | 0.1 10V Ceramic | AB |
| C7415 | VCCCCZ1HH360J | | 36p 50V Ceramic | AA |
| C7451 | VCCCCZ1HH180J | | 18p 50V Ceramic | AB |
| C7455 | VCCCCZ1HH150J | | 15p 50V Ceramic | AB |
| C7456 | VCCCCZ1HH560J | | 56p 50V Ceramic | AB |
| C7459 | VCKYCZ1CB103K | | 0.01 16V Ceramic | AB |
| C7460 | VCKYCZ1HB471K | | 470p 50V Ceramic | AB |
| C7462 | VCKYCZ1CB103K | | 0.01 16V Ceramic | AB |
| C7463 | VCKYCZ1CB103K | | 0.01 16V Ceramic | AB |
| C8401 | VCKYCZ1CB103K | | 0.01 16V Ceramic | AB |
| C8403 | VCCCCZ1HH330J | | 33p 50V Ceramic | AB |
| C8404 | VCCCCZ1HH180J | | 18p 50V Ceramic | AB |
| C8405 | VCCCCZ1HH390J | | 39p 50V Ceramic | AB |
| C8408 | VCCCCZ1HH470J | | 47p 50V Ceramic | AB |
| C8409 | VCCCCZ1HH221J | | 220p 50V Ceramic | AB |
| C8410 | VCCCCZ1HH330J | | 33p 50V Ceramic | AB |
| C8411 | VCKYCZ1CB103K | | 0.01 16V Ceramic | AB |
| C8412 | VCKYCZ1CB103K | | 0.01 16V Ceramic | AB |
| C8413 | VCCCCZ1HH470J | | 47p 50V Ceramic | AB |
| C8414 | VCKYCY0JB105K | | 1 6.3V Ceramic | AC |
| C8451 | VCKYCZ1CB103K | | 0.01 16V Ceramic | AB |
| C8452 | VCKYCZ1CB103K | | 0.01 16V Ceramic | AB |
| C8453 | VCCCCZ1HH560J | | 56p 50V Ceramic | AB |
| C8454 | VCCCCZ1HH220J | | 22p 50V Ceramic | AB |
| C8455 | VCKYCZ1HB681K | | 680p 50V Ceramic | AB |
| C8456 | VCKYCZ1CB103K | | 0.01 16V Ceramic | AB |
| C8458 | VCKYCZ1CB103K | | 0.01 16V Ceramic | AB |
| C8461 | VCKYCZ1CB103K | | 0.01 16V Ceramic | AB |

## RESISTORS

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| R189 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R190 | VRS-CZ1JF220J | | 22 1/16W Metal Oxide | AA |
| R194 | VRS-CZ1JF104J | | 100k 1/16W Metal Oxide | AA |
| R195 | VRS-CZ1JF133J | | 13k 1/16W Metal Oxide | AA |
| R196 | VRS-CZ1JF203J | | 20k 1/16W Metal Oxide | AA |
| R205 | VRS-CZ1JF000J | | 0 1/16W Metal Oxide | AA |
| R406 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R407 | VRS-CZ1JF151J | | 150 1/16W Metal Oxide | AA |
| R408 | VRS-CZ1JF272D | | 2.7k 1/16W Metal Oxide | AB |
| R410 | VRS-CZ1JF151J | | 150 1/16W Metal Oxide | AA |
| R413 | VRS-CZ1JF151J | | 150 1/16W Metal Oxide | AA |
| R414 | VRS-CZ1JF272D | | 2.7k 1/16W Metal Oxide | AB |
| R416 | VRS-CZ1JF151J | | 150 1/16W Metal Oxide | AA |
| R417 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R418 | VRS-CZ1JF151J | | 150 1/16W Metal Oxide | AA |
| R420 | VRS-CZ1JF151J | | 150 1/16W Metal Oxide | AA |
| R421 | VRS-CZ1JF153J | | 15k 1/16W Metal Oxide | AA |
| R422 | VRS-CZ1JF122J | | 1.2k 1/16W Metal Oxide | AA |
| R424 | VRS-CZ1JF272D | | 2.7k 1/16W Metal Oxide | AB |
| R425 | VRS-CZ1JF151J | | 150 1/16W Metal Oxide | AA |
| R426 | VRS-CZ1JF124J | | 120k 1/16W Metal Oxide | AA |
| R432 | VRS-CZ1JF393D | | 39k 1/16W Metal Oxide | AB |
| R433 | VRS-CZ1JF303D | | 30k 1/16W Metal Oxide | AA |
| R434 | VRS-CZ1JF821J | | 820 1/16W Metal Oxide | AA |
| R435 | VRS-CZ1JF823D | | 82k 1/16W Metal Oxide | AB |
| R436 | VRS-CZ1JF393D | | 39k 1/16W Metal Oxide | AB |
| R437 | VRS-CZ1JF303D | | 30k 1/16W Metal Oxide | AA |
| R439 | VRS-CZ1JF823D | | 82k 1/16W Metal Oxide | AB |
| R440 | VRS-CZ1JF101J | | 100 1/16W Metal Oxide | AA |
| R444 | VRS-CZ1JF393D | | 39k 1/16W Metal Oxide | AB |
| R445 | VRS-CZ1JF303D | | 30k 1/16W Metal Oxide | AA |
| R447 | VRS-CZ1JF103D | | 10k 1/16W Metal Oxide | AB |
| R451 | VRS-CZ1JF392J | | 3.9k 1/16W Metal Oxide | AA |
| R452 | VRS-CZ1JF823D | | 82k 1/16W Metal Oxide | AB |
| R454 | VRS-CZ1JF392J | | 3.9k 1/16W Metal Oxide | AA |
| R455 | VRS-CZ1JF682J | | 6.8k 1/16W Metal Oxide | AA |
| R456 | VRS-CZ1JF272J | | 2.7k 1/16W Metal Oxide | AA |
| R457 | VRS-CZ1JF222J | | 2.2k 1/16W Metal Oxide | AA |
| R458 | VRS-CZ1JF103D | | 10k 1/16W Metal Oxide | AB |
| R459 | VRS-CZ1JF392J | | 3.9k 1/16W Metal Oxide | AA |
| R460 | VRS-CZ1JF392J | | 3.9k 1/16W Metal Oxide | AA |
| R461 | VRS-CZ1JF272J | | 2.7k 1/16W Metal Oxide | AA |
| R462 | VRS-CZ1JF222J | | 2.2k 1/16W Metal Oxide | AA |
| R463 | VRS-CZ1JF822J | | 8.2k 1/16W Metal Oxide | AA |
| R464 | VRS-CZ1JF153J | | 15k 1/16W Metal Oxide | AA |
| R488 | VRS-CY1JF000J | | 0 1/16W Metal Oxide | AA |
| R498 | VRS-CZ1JF222J | | 2.2k 1/16W Metal Oxide | AA |
| R601 | VRS-CZ1JF103J | | 10k 1/16W Metal Oxide | AA |
| R602 | VRS-CZ1JF272J | | 2.7k 1/16W Metal Oxide | AA |
| R603 | VRS-CZ1JF154J | | 150k 1/16W Metal Oxide | AA |
| R604 | VRS-CZ1JF153J | | 15k 1/16W Metal Oxide | AA |
| R605 | VRS-CZ1JF472J | | 4.7k 1/16W Metal Oxide | AA |
| R606 | VRS-CZ1JF334J | | 330k 1/16W Metal Oxide | AA |
| R607 | VRS-CZ1JF334J | | 330k 1/16W Metal Oxide | AA |
| R609 | VRS-CZ1JF222J | | 2.2k 1/16W Metal Oxide | AA |
| R612 | VRS-CZ1JF681J | | 680 1/16W Metal Oxide | AA |
| R614 | VRS-CZ1JF122J | | 1.2k 1/16W Metal Oxide | AA |
| R615 | VRS-CZ1JF561J | | 560 1/16W Metal Oxide | AA |
| R616 | VRS-CZ1JF333J | | 33k 1/16W Metal Oxide | AA |
| R617 | VRS-CZ1JF335J | | 3.3M 1/16W Metal Oxide | AA |
| R618 | VRS-CZ1JF154J | | 150k 1/16W Metal Oxide | AA |
| R619 | VRS-CZ1JF274J | | 270k 1/16W Metal Oxide | AA |
| R624 | VRS-CZ1JF182J | | 1.8k 1/16W Metal Oxide | AA |
| R625 | VRS-CZ1JF103J | | 10k 1/16W Metal Oxide | AA |
| R626 | VRS-CZ1JF122J | | 1.2k 1/16W Metal Oxide | AA |
| R627 | VRS-CZ1JF103J | | 10k 1/16W Metal Oxide | AA |
| R628 | VRS-CZ1JF472J | | 4.7k 1/16W Metal Oxide | AA |
| R629 | VRS-CZ1JF152J | | 1.5k 1/16W Metal Oxide | AA |
| R632 | VRS-CZ1JF822J | | 8.2k 1/16W Metal Oxide | AA |
| R633 | VRS-CZ1JF224J | | 220k 1/16W Metal Oxide | AA |
| R702 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R703 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R704 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R705 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R707 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R708 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R709 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R710 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R711 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R712 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R713 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R714 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R715 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R716 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R717 | VRS-CZ1JF224J | | 220k 1/16W Metal Oxide | AA |
| R718 | VRS-CZ1JF224J | | 220k 1/16W Metal Oxide | AA |
| R719 | VRS-CZ1JF224J | | 220k 1/16W Metal Oxide | AA |
| R720 | VRS-CZ1JF103J | | 10k 1/16W Metal Oxide | AA |
| R722 | VRS-CZ1JF224J | | 220k 1/16W Metal Oxide | AA |

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| R723 | VRS-CZ1JF104J | | 100k 1/16W Metal Oxide | AA |
| R724 | VRS-CZ1JF104J | | 100k 1/16W Metal Oxide | AA |
| R725 | VRS-CZ1JF104J | | 100k 1/16W Metal Oxide | AA |
| R726 | VRS-CZ1JF104J | | 100k 1/16W Metal Oxide | AA |
| R727 | VRS-CZ1JF104J | | 100k 1/16W Metal Oxide | AA |
| R728 | VRS-CZ1JF104J | | 100k 1/16W Metal Oxide | AA |
| R729 | VRS-CZ1JF104J | | 100k 1/16W Metal Oxide | AA |
| R730 | VRS-CZ1JF104J | | 100k 1/16W Metal Oxide | AA |
| R731 | VRS-CZ1JF104J | | 100k 1/16W Metal Oxide | AA |
| R732 | VRS-CZ1JF104J | | 100k 1/16W Metal Oxide | AA |
| R733 | VRS-CZ1JF822J | | 8.2k 1/16W Metal Oxide | AA |
| R734 | VRS-CZ1JF822J | | 8.2k 1/16W Metal Oxide | AA |
| R735 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R737 | VRS-CZ1JF334J | | 330k 1/16W Metal Oxide | AA |
| R738 | VRS-CZ1JF104J | | 100k 1/16W Metal Oxide | AA |
| R740 | VRS-CZ1JF473J | | 47k 1/16W Metal Oxide | AA |
| R741 | VRS-CZ1JF104J | | 100k 1/16W Metal Oxide | AA |
| R742 | VRS-CZ1JF103J | | 10k 1/16W Metal Oxide | AA |
| R743 | VRS-CZ1JF152J | | 1.5k 1/16W Metal Oxide | AA |
| R744 | VRS-CZ1JF103J | | 10k 1/16W Metal Oxide | AA |
| R745 | VRS-CZ1JF183J | | 18k 1/16W Metal Oxide | AA |
| R746 | VRS-CZ1JF682J | | 6.8k 1/16W Metal Oxide | AA |
| R747 | VRS-CZ1JF563D | | 56k 1/16W Metal Oxide | AA |
| R748 | VRS-CZ1JF154J | | 150k 1/16W Metal Oxide | AA |
| R749 | VRS-CZ1JF103J | | 10k 1/16W Metal Oxide | AA |
| R750 | VRS-CZ1JF104J | | 100k 1/16W Metal Oxide | AA |
| R751 | VRS-CZ1JF184J | | 180k 1/16W Metal Oxide | AA |
| R753 | VRS-CZ1JF221J | | 220 1/16W Metal Oxide | AA |
| R755 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R756 | VRS-CZ1JF103J | | 10k 1/16W Metal Oxide | AA |
| R757 | VRS-CZ1JF103J | | 10k 1/16W Metal Oxide | AA |
| R758 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R759 | VRS-CZ1JF222J | | 2.2k 1/16W Metal Oxide | AA |
| R760 | VRS-CZ1JF222J | | 2.2k 1/16W Metal Oxide | AA |
| R761 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R762 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R763 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R765 | VRS-CZ1JF104J | | 100k 1/16W Metal Oxide | AA |
| R766 | VRS-CZ1JF181J | | 180 1/16W Metal Oxide | AA |
| R767 | VRS-CZ1JF392J | | 3.9k 1/16W Metal Oxide | AA |
| R768 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R769 | VRS-CZ1JF471J | | 470 1/16W Metal Oxide | AA |
| R772 | VRS-CZ1JF153D | | 15k 1/16W Metal Oxide | AB |
| R773 | VRS-CZ1JF103D | | 10k 1/16W Metal Oxide | AB |
| R774 | VRS-CZ1JF104J | | 100k 1/16W Metal Oxide | AA |
| R775 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R776 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R777 | VRS-CZ1JF473J | | 47k 1/16W Metal Oxide | AA |
| R778 | VRS-CZ1JF473J | | 47k 1/16W Metal Oxide | AA |
| R779 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R780 | VRS-CZ1JF330J | | 33 1/16W Metal Oxide | AA |
| R781 | VRS-CZ1JF330J | | 33 1/16W Metal Oxide | AA |
| R785 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R786 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R787 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R788 | VRS-CZ1JF000J | | 0 1/16W Metal Oxide | AA |
| R789 | VRS-CZ1JF000J | | 0 1/16W Metal Oxide | AA |
| R790 | VRS-CZ1JF104J | | 100k 1/16W Metal Oxide | AA |
| R791 | VRS-CZ1JF104J | | 100k 1/16W Metal Oxide | AA |
| R792 | VRS-CZ1JF104J | | 100k 1/16W Metal Oxide | AA |
| R793 | VRS-CZ1JF104J | | 100k 1/16W Metal Oxide | AA |
| R794 | VRS-CZ1JF104J | | 100k 1/16W Metal Oxide | AA |
| R795 | VRS-CZ1JF105J | | 1M 1/16W Metal Oxide | AA |
| R797 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R798 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R799 | VRS-CZ1JF000J | | 0 1/16W Metal Oxide | AA |
| R801 | VRS-CZ1JF101J | | 100 1/16W Metal Oxide | AA |
| R802 | VRS-CZ1JF101J | | 100 1/16W Metal Oxide | AA |
| R803 | VRS-CZ1JF101J | | 100 1/16W Metal Oxide | AA |
| R902 | VRS-CZ1JF103J | | 10k 1/16W Metal Oxide | AA |
| R903 | VRS-CZ1JF472J | | 4.7k 1/16W Metal Oxide | AA |
| R904 | VRS-CZ1JF562J | | 5.6k 1/16W Metal Oxide | AA |
| R905 | VRS-CZ1JF472J | | 4.7k 1/16W Metal Oxide | AA |
| R907 | VRS-CZ1JF153J | | 15k 1/16W Metal Oxide | AA |
| R908 | VRS-CZ1JF153J | | 15k 1/16W Metal Oxide | AA |

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| R911 | VRS-CZ1JF333J | | 33k 1/16W Metal Oxide | AA |
| R912 | VRS-CZ1JF333J | | 33k 1/16W Metal Oxide | AA |
| R913 | VRS-CZ1JF273J | | 27k 1/16W Metal Oxide | AA |
| R914 | VRS-CZ1JF753J | | 75k 1/16W Metal Oxide | AA |
| R915 | VRS-CZ1JF823J | | 82k 1/16W Metal Oxide | AA |
| R916 | VRS-CZ1JF333J | | 33k 1/16W Metal Oxide | AA |
| R917 | VRS-CZ1JF104J | | 100k 1/16W Metal Oxide | AA |
| R918 | VRS-CZ1JF753J | | 75k 1/16W Metal Oxide | AA |
| R919 | VRS-CZ1JF123J | | 12k 1/16W Metal Oxide | AA |
| R920 | VRS-CZ1JF333J | | 33k 1/16W Metal Oxide | AA |
| R921 | VRS-CZ1JF333J | | 33k 1/16W Metal Oxide | AA |
| R922 | VRS-CZ1JF333J | | 33k 1/16W Metal Oxide | AA |
| R923 | VRS-CZ1JF823J | | 82k 1/16W Metal Oxide | AA |
| R924 | VRS-CZ1JF393J | | 39k 1/16W Metal Oxide | AA |
| R925 | VRS-CZ1JF753J | | 75k 1/16W Metal Oxide | AA |
| R926 | VRS-CZ1JF393J | | 39k 1/16W Metal Oxide | AA |
| R928 | VRS-CZ1JF472J | | 4.7k 1/16W Metal Oxide | AA |
| R929 | VRS-CZ1JF681J | | 680 1/16W Metal Oxide | AA |
| R930 | VRS-CZ1JF102D | | 1k 1/16W Metal Oxide | AA |
| R931 | VRS-CY1JFR22J | | 0.22 1/16W Metal Oxide | AA |
| R933 | VRS-CZ1JF224J | | 220k 1/16W Metal Oxide | AA |
| R934 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R935 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R936 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R937 | VRS-CZ1JF222J | | 2.2k 1/16W Metal Oxide | AA |
| R938 | VRS-CZ1JF822J | | 8.2k 1/16W Metal Oxide | AA |
| R939 | VRS-CZ1JF333J | | 33k 1/16W Metal Oxide | AA |
| R940 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R941 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R942 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R943 | VRS-CZ1JF123D | | 12k 1/16W Metal Oxide | AA |
| R944 | VRS-CZ1JF103D | | 10k 1/16W Metal Oxide | AB |
| R945 | VRS-CZ1JF222J | | 2.2k 1/16W Metal Oxide | AA |
| R946 | VRS-CZ1JF222J | | 2.2k 1/16W Metal Oxide | AA |
| R947 | VRS-CZ1JF123D | | 12k 1/16W Metal Oxide | AA |
| R949 | VRS-CZ1JF122J | | 1.2k 1/16W Metal Oxide | AA |
| R951 | VRS-CZ1JF103J | | 10k 1/16W Metal Oxide | AA |
| R1403 | VRS-CZ1JF333J | | 33k 1/16W Metal Oxide | AA |
| R1404 | VRS-CZ1JF153J | | 15k 1/16W Metal Oxide | AA |
| R1407 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R1408 | VRS-CZ1JF152J | | 1.5k 1/16W Metal Oxide | AA |
| R1409 | VRS-CZ1JF121J | | 120 1/16W Metal Oxide | AA |
| R1410 | VRS-CZ1JF820J | | 82 1/16W Metal Oxide | AA |
| R1411 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R1413 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R1416 | VRS-CZ1JF471J | | 470 1/16W Metal Oxide | AA |
| R1452 | VRS-CZ1JF750D | | 75 1/16W Metal Oxide | AA |
| R1453 | VRS-CZ1JF103J | | 10k 1/16W Metal Oxide | AA |
| R1454 | VRS-CZ1JF103J | | 10k 1/16W Metal Oxide | AA |
| R1455 | VRS-CZ1JF103J | | 10k 1/16W Metal Oxide | AA |
| R1458 | VRS-CZ1JF103J | | 10k 1/16W Metal Oxide | AA |
| R1803 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R1806 | VRS-CZ1JF101J | | 100 1/16W Metal Oxide | AA |
| R1807 | VRS-CZ1JF153J | | 15k 1/16W Metal Oxide | AA |
| R1808 | VRS-CZ1JF123J | | 12k 1/16W Metal Oxide | AA |
| R1809 | VRS-CZ1JF334J | | 330k 1/16W Metal Oxide | AA |
| R1810 | VRS-CZ1JF223J | | 22k 1/16W Metal Oxide | AA |
| R1812 | VRS-CZ1JF104J | | 100k 1/16W Metal Oxide | AA |
| R1813 | VRS-CZ1JF105J | | 1M 1/16W Metal Oxide | AA |
| R1814 | VRS-CZ1JF223J | | 22k 1/16W Metal Oxide | AA |
| R1815 | VRS-CZ1JF473J | | 47k 1/16W Metal Oxide | AA |
| R1816 | VRS-CZ1JF100J | | 10 1/16W Metal Oxide | AA |
| R1817 | VRS-CZ1JF100J | | 10 1/16W Metal Oxide | AA |
| R1818 | VRS-CZ1JF472J | | 4.7k 1/16W Metal Oxide | AA |
| R1819 | VRS-CZ1JF683J | | 68k 1/16W Metal Oxide | AA |
| R1820 | VRS-CZ1JF512J | | 5.1k 1/16W Metal Oxide | AB |
| R1821 | VRS-CZ1JF103J | | 10k 1/16W Metal Oxide | AA |
| R1901 | VRS-CZ1JF103J | | 10k 1/16W Metal Oxide | AA |
| R1902 | VRS-CZ1JF683J | | 68k 1/16W Metal Oxide | AA |
| R1903 | VRS-CZ1JF333J | | 33k 1/16W Metal Oxide | AA |
| R1905 | VRS-CZ1JF471J | | 470 1/16W Metal Oxide | AA |
| R1906 | VRS-CZ1JF124J | | 120k 1/16W Metal Oxide | AA |
| R1907 | VRS-CZ1JF183J | | 18k 1/16W Metal Oxide | AA |
| R1908 | VRS-CZ1JF103J | | 10k 1/16W Metal Oxide | AA |
| R1909 | VRS-CZ1JF103J | | 10k 1/16W Metal Oxide | AA |

| Ref. No. | Part No. | ★ | Description | | | Code |
|---|---|---|---|---|---|---|
| R1910 | VRS-CZ1JF363J | | 36k | 1/16W | Metal Oxide | AA |
| R1911 | VRS-CZ1JF563J | | 56k | 1/16W | Metal Oxide | AA |
| R1912 | VRS-CZ1JF183J | | 18k | 1/16W | Metal Oxide | AA |
| R1913 | VRS-CZ1JF105J | | 1M | 1/16W | Metal Oxide | AA |
| R1914 | VRS-CZ1JF103J | | 10k | 1/16W | Metal Oxide | AA |
| R1915 | VRS-CZ1JF333J | | 33k | 1/16W | Metal Oxide | AA |
| R1916 | VRS-CZ1JF153J | | 15k | 1/16W | Metal Oxide | AA |
| R1917 | VRS-CZ1JF103J | | 10k | 1/16W | Metal Oxide | AA |
| R1919 | VRS-CZ1JF103J | | 10k | 1/16W | Metal Oxide | AA |
| R1920 | VRS-CZ1JF103J | | 10k | 1/16W | Metal Oxide | AA |
| R1921 | VRS-CZ1JF682J | | 6.8k | 1/16W | Metal Oxide | AA |
| R1922 | VRS-CZ1JF562J | | 5.6k | 1/16W | Metal Oxide | AA |
| R1923 | VRS-CZ1JF562J | | 5.6k | 1/16W | Metal Oxide | AA |
| R1924 | VRS-CZ1JF123J | | 12k | 1/16W | Metal Oxide | AA |
| R1925 | VRS-CZ1JF473J | | 47k | 1/16W | Metal Oxide | AA |
| R1926 | VRS-CZ1JF333J | | 33k | 1/16W | Metal Oxide | AA |
| R1927 | VRS-CZ1JF103J | | 10k | 1/16W | Metal Oxide | AA |
| R1929 | VRS-CZ1JF333J | | 33k | 1/16W | Metal Oxide | AA |
| R1930 | VRS-CZ1JF472J | | 4.7k | 1/16W | Metal Oxide | AA |
| R1931 | VRS-CZ1JF472J | | 4.7k | 1/16W | Metal Oxide | AA |
| R1932 | VRS-CZ1JF183J | | 18k | 1/16W | Metal Oxide | AA |
| R1933 | VRS-CZ1JF393J | | 39k | 1/16W | Metal Oxide | AA |
| R1934 | VRS-CZ1JF103J | | 10k | 1/16W | Metal Oxide | AA |
| R1935 | VRS-CZ1JF153J | | 15k | 1/16W | Metal Oxide | AA |
| R1936 | VRS-CZ1JF243J | | 24k | 1/16W | Metal Oxide | AA |
| R1937 | VRS-CZ1JF823J | | 82k | 1/16W | Metal Oxide | AA |
| R1938 | VRS-CZ1JF104J | | 100k | 1/16W | Metal Oxide | AA |
| R1939 | VRS-CZ1JF393J | | 39k | 1/16W | Metal Oxide | AA |
| R1940 | VRS-CZ1JF563J | | 56k | 1/16W | Metal Oxide | AA |
| R1941 | VRS-CZ1JF273D | | 27k | 1/16W | Metal Oxide | AA |
| R1942 | VRS-CZ1JF333D | | 33k | 1/16W | Metal Oxide | AB |
| R1943 | VRS-CZ1JF105J | | 1M | 1/16W | Metal Oxide | AA |
| R1944 | VRS-CZ1JF333D | | 33k | 1/16W | Metal Oxide | AB |
| R1945 | VRS-CZ1JF563D | | 56k | 1/16W | Metal Oxide | AA |
| R1946 | VRS-CZ1JF203D | | 20k | 1/16W | Metal Oxide | AA |
| R1947 | VRS-CZ1JF333D | | 33k | 1/16W | Metal Oxide | AB |
| R1948 | VRS-CZ1JF105J | | 1M | 1/16W | Metal Oxide | AA |
| R1949 | VRS-CZ1JF333J | | 33k | 1/16W | Metal Oxide | AA |
| R1950 | VRS-CZ1JF563J | | 56k | 1/16W | Metal Oxide | AA |
| R1951 | VRS-CZ1JF103D | | 10k | 1/16W | Metal Oxide | AB |
| R1952 | VRS-CZ1JF562D | | 5.6k | 1/16W | Metal Oxide | AB |
| R1953 | VRS-CZ1JF105J | | 1M | 1/16W | Metal Oxide | AA |
| R1955 | VRS-CZ1JF103J | | 10k | 1/16W | Metal Oxide | AA |
| R1956 | VRS-CZ1JF473D | | 47k | 1/16W | Metal Oxide | AB |
| R1957 | VRS-CZ1JF472J | | 4.7k | 1/16W | Metal Oxide | AA |
| R1959 | VRS-CZ1JF153J | | 15k | 1/16W | Metal Oxide | AA |
| R1960 | VRS-CZ1JF103J | | 10k | 1/16W | Metal Oxide | AA |
| R1961 | VRS-CZ1JF471J | | 470 | 1/16W | Metal Oxide | AA |
| R1962 | VRS-CZ1JF471J | | 470 | 1/16W | Metal Oxide | AA |
| R1963 | VRS-CZ1JF331J | | 330 | 1/16W | Metal Oxide | AA |
| R1965 | VRS-CZ1JF102J | | 1k | 1/16W | Metal Oxide | AA |
| R1966 | VRS-CZ1JF561J | | 560 | 1/16W | Metal Oxide | AA |
| R1967 | VRS-CZ1JF561J | | 560 | 1/16W | Metal Oxide | AA |
| R1968 | VRS-CZ1JF121J | | 120 | 1/16W | Metal Oxide | AA |
| R1970 | VRS-CZ1JF471J | | 470 | 1/16W | Metal Oxide | AA |
| R1972 | VRS-CZ1JF104J | | 100k | 1/16W | Metal Oxide | AA |
| R1973 | VRS-CZ1JF103J | | 10k | 1/16W | Metal Oxide | AA |
| R1974 | VRS-CZ1JF683J | | 68k | 1/16W | Metal Oxide | AA |
| R1975 | VRS-CZ1JF183J | | 18k | 1/16W | Metal Oxide | AA |
| R1976 | VRS-CZ1JF471J | | 470 | 1/16W | Metal Oxide | AA |
| R1980 | VRS-CZ1JF561J | | 560 | 1/16W | Metal Oxide | AA |
| R1981 | VRS-CZ1JF561J | | 560 | 1/16W | Metal Oxide | AA |
| R1982 | VRS-CZ1JF121J | | 120 | 1/16W | Metal Oxide | AA |
| R2402 | VRS-CZ1JF561J | | 560 | 1/16W | Metal Oxide | AA |
| R2403 | VRS-CZ1JF471J | | 470 | 1/16W | Metal Oxide | AA |
| R2404 | VRS-CZ1JF152J | | 1.5k | 1/16W | Metal Oxide | AA |
| R2405 | VRS-CZ1JF471J | | 470 | 1/16W | Metal Oxide | AA |
| R2406 | VRS-CZ1JF222J | | 2.2k | 1/16W | Metal Oxide | AA |
| R2407 | VRS-CZ1JF273J | | 27k | 1/16W | Metal Oxide | AA |
| R2408 | VRS-CZ1JF822J | | 8.2k | 1/16W | Metal Oxide | AA |
| R2409 | VRS-CZ1JF102J | | 1k | 1/16W | Metal Oxide | AA |
| R2410 | VRS-CZ1JF152J | | 1.5k | 1/16W | Metal Oxide | AA |
| R2411 | VRS-CZ1JF821J | | 820 | 1/16W | Metal Oxide | AA |
| R2412 | VRS-CZ1JF222J | | 2.2k | 1/16W | Metal Oxide | AA |
| R2413 | VRS-CZ1JF102J | | 1k | 1/16W | Metal Oxide | AA |
| R2414 | VRS-CZ1JF183D | | 18k | 1/16W | Metal Oxide | AB |
| R2415 | VRS-CZ1JF561D | | 560 | 1/16W | Metal Oxide | AA |
| R2416 | VRS-CZ1JF561D | | 560 | 1/16W | Metal Oxide | AA |
| R2417 | VRS-CZ1JF183D | | 18k | 1/16W | Metal Oxide | AB |
| R2418 | VRS-CZ1JF102J | | 1k | 1/16W | Metal Oxide | AA |
| R2419 | VRS-CZ1JF102J | | 1k | 1/16W | Metal Oxide | AA |
| R2420 | VRS-CZ1JF222J | | 2.2k | 1/16W | Metal Oxide | AA |
| R2421 | VRS-CZ1JF222J | | 2.2k | 1/16W | Metal Oxide | AA |
| R2423 | VRS-CZ1JF102J | | 1k | 1/16W | Metal Oxide | AA |
| R2901 | VRS-CZ1JF105J | | 1M | 1/16W | Metal Oxide | AA |
| R2902 | VRS-CZ1JF122J | | 1.2k | 1/16W | Metal Oxide | AA |
| R2903 | VRS-CZ1JF123J | | 12k | 1/16W | Metal Oxide | AA |
| R2905 | VRS-CZ1JF104J | | 100k | 1/16W | Metal Oxide | AA |
| R2908 | VRS-CZ1JF681J | | 680 | 1/16W | Metal Oxide | AA |
| R2911 | VRS-CZ1JF562J | | 5.6k | 1/16W | Metal Oxide | AA |
| R2913 | VRS-TV1JD3R3J | | 3.3 | 1/16W | Metal Oxide | AA |
| R2914 | VRS-CZ1JF334D | | 330k | 1/16W | Metal Oxide | AA |
| R2915 | VRS-TQ2BD471J | | 470 | 1/8W | Metal Oxide | AA |
| R2921 | VRS-CZ1JF184D | | 180k | 1/16W | Metal Oxide | AB |
| R2922 | VRS-CZ1JF184D | | 180k | 1/16W | Metal Oxide | AB |
| R2923 | VRS-CZ1JF823D | | 82k | 1/16W | Metal Oxide | AB |
| R2925 | VRS-CZ1JF123J | | 12k | 1/16W | Metal Oxide | AA |
| R2932 | VRS-TV2BDR12J | | 0.12 | 1/8W | Metal Oxide | AB |
| R2933 | VRS-TV2BDR12J | | 0.12 | 1/8W | Metal Oxide | AB |
| R2934 | VRS-CZ1JF821J | | 820 | 1/16W | Metal Oxide | AA |
| R2935 | VRS-CZ1JF334J | | 330k | 1/16W | Metal Oxide | AA |
| R2936 | VRS-CZ1JF332J | | 3.3k | 1/16W | Metal Oxide | AA |
| R2937 | VRS-CZ1JF152J | | 1.5k | 1/16W | Metal Oxide | AA |
| R2938 | VRS-CZ1JF332J | | 3.3k | 1/16W | Metal Oxide | AA |
| R2939 | VRS-CZ1JF472D | | 4.7k | 1/16W | Metal Oxide | AB |
| R2940 | VRS-CZ1JF123J | | 12k | 1/16W | Metal Oxide | AA |
| R2941 | VRS-CZ1JF222D | | 2.2k | 1/16W | Metal Oxide | AA |
| R2942 | VRS-CZ1JF123D | | 12k | 1/16W | Metal Oxide | AA |
| R2943 | VRS-CZ1JF473J | | 47k | 1/16W | Metal Oxide | AA |
| R2944 | VRS-CZ1JF152J | | 1.5k | 1/16W | Metal Oxide | AA |
| R2945 | VRS-TV2BDR12J | | 0.12 | 1/8W | Metal Oxide | AB |
| R2946 | VRS-CZ1JF473J | | 47k | 1/16W | Metal Oxide | AA |
| R2947 | VRS-CZ1JF473D | | 47k | 1/16W | Metal Oxide | AB |
| R2948 | VRS-CZ1JF222D | | 2.2k | 1/16W | Metal Oxide | AA |
| R2949 | VRS-CZ1JF104J | | 100k | 1/16W | Metal Oxide | AA |
| R2950 | VRS-CZ1JF101J | | 100 | 1/16W | Metal Oxide | AA |
| R2951 | VRS-CZ1JF392J | | 3.9k | 1/16W | Metal Oxide | AA |
| R3602 | VRS-CZ1JF102J | | 1k | 1/16W | Metal Oxide | AA |
| R3603 | VRS-CZ1JF473J | | 47k | 1/16W | Metal Oxide | AA |
| R3800 | VRS-CZ1JF223J | | 22k | 1/16W | Metal Oxide | AA |
| R3801 | VRS-CZ1JF473J | | 47k | 1/16W | Metal Oxide | AA |
| R3802 | VRS-CZ1JF472J | | 4.7k | 1/16W | Metal Oxide | AA |
| R3803 | VRS-CZ1JF472J | | 4.7k | 1/16W | Metal Oxide | AA |
| R3804 | VRS-CZ1JF683J | | 68k | 1/16W | Metal Oxide | AA |
| R3805 | VRS-CZ1JF272D | | 2.7k | 1/16W | Metal Oxide | AB |
| R3806 | VRS-CZ1JF562D | | 5.6k | 1/16W | Metal Oxide | AB |
| R3807 | VRS-CZ1JF105J | | 1M | 1/16W | Metal Oxide | AA |
| R3808 | VRS-CZ1JF683J | | 68k | 1/16W | Metal Oxide | AA |
| R3809 | VRS-CZ1JF223J | | 22k | 1/16W | Metal Oxide | AA |
| R3810 | VRS-CZ1JF103J | | 10k | 1/16W | Metal Oxide | AA |
| R3812 | VRS-CZ1JF564J | | 560k | 1/16W | Metal Oxide | AA |
| R3816 | VRS-CZ1JF564J | | 560k | 1/16W | Metal Oxide | AA |
| R3817 | VRS-CZ1JF105J | | 1M | 1/16W | Metal Oxide | AA |
| R3818 | VRS-CZ1JF471J | | 470 | 1/16W | Metal Oxide | AA |
| R3820 | VRS-CZ1JF821J | | 820 | 1/16W | Metal Oxide | AA |
| R3822 | VRS-CZ1JF471J | | 470 | 1/16W | Metal Oxide | AA |
| R3823 | VRS-CZ1JF471J | | 470 | 1/16W | Metal Oxide | AA |
| R3824 | VRS-CZ1JF471J | | 470 | 1/16W | Metal Oxide | AA |
| R3826 | VRS-CZ1JF471J | | 470 | 1/16W | Metal Oxide | AA |
| R3828 | VRS-CZ1JF000J | | 0 | 1/16W | Metal Oxide | AA |
| R3829 | VRS-CZ1JF000J | | 0 (AH150U/UC) | 1/16W | Metal Oxide | AA |
| R3830 | VRS-CZ1JF393J | | 39k | 1/16W | Metal Oxide | AA |
| R3831 | VRS-CZ1JF471J | | 470 | 1/16W | Metal Oxide | AA |
| R3832 | VRS-CZ1JF393J | | 39k | 1/16W | Metal Oxide | AA |
| R3833 | VRS-CZ1JF471J | | 470 | 1/16W | Metal Oxide | AA |
| R3834 | VRS-CZ1JF104J | | 100k | 1/16W | Metal Oxide | AA |
| R3835 | VRS-CZ1JF471J | | 470 | 1/16W | Metal Oxide | AA |
| R3836 | VRS-CZ1JF471J | | 470 | 1/16W | Metal Oxide | AA |
| R3837 | VRS-CZ1JF561J | | 560 | 1/16W | Metal Oxide | AA |

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| R3839 | VRS-CZ1JF183J | | 18k 1/16W Metal Oxide | AA |
| R3840 | VRS-CZ1JF303D | | 30k 1/16W Metal Oxide (AH150U/UC) | AA |
| R3840 | VRS-CZ1JF473D | | 47k 1/16W Metal Oxide (AH160U) | AB |
| R3841 | VRS-CZ1JF273J | | 27k 1/16W Metal Oxide | AA |
| R3842 | VRS-CZ1JF153J | | 15k 1/16W Metal Oxide | AA |
| R3843 | VRS-CZ1JF104J | | 100k 1/16W Metal Oxide | AA |
| R3845 | VRS-CZ1JF682J | | 6.8k 1/16W Metal Oxide | AA |
| R3846 | VRS-CZ1JF273J | | 27k 1/16W Metal Oxide | AA |
| R3848 | VRS-CZ1JF273J | | 27k 1/16W Metal Oxide | AA |
| R3850 | VRS-CZ1JF103J | | 10k 1/16W Metal Oxide | AA |
| R3853 | VRS-CZ1JF273D | | 27k 1/16W Metal Oxide | AA |
| R3854 | VRS-CZ1JF183D | | 18k 1/16W Metal Oxide | AB |
| R4402 | VRS-CZ1JF103J | | 10k 1/16W Metal Oxide | AA |
| R4403 | VRS-CZ1JF103J | | 10k 1/16W Metal Oxide | AA |
| R4705 | VRS-CZ1JF000J | | 0 1/16W Metal Oxide | AA |
| R6401 | VRS-CZ1JF681J | | 680 1/16W Metal Oxide | AA |
| R6402 | VRS-CZ1JF821J | | 820 1/16W Metal Oxide | AA |
| R6403 | VRS-CZ1JF821J | | 820 1/16W Metal Oxide | AA |
| R6404 | VRS-CZ1JF121J | | 120 1/16W Metal Oxide | AA |
| R6407 | VRS-CZ1JF273J | | 27k 1/16W Metal Oxide | AA |
| R6408 | VRS-CZ1JF153J | | 15k 1/16W Metal Oxide | AA |
| R6409 | VRS-CZ1JF561J | | 560 1/16W Metal Oxide | AA |
| R6410 | VRS-CZ1JF561J | | 560 1/16W Metal Oxide | AA |
| R6411 | VRS-CZ1JF561J | | 560 1/16W Metal Oxide | AA |
| R6413 | VRS-CZ1JF123J | | 12k 1/16W Metal Oxide | AA |
| R6414 | VRS-CZ1JF561J | | 560 1/16W Metal Oxide | AA |
| R6415 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R6416 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R6417 | VRS-CZ1JF221J | | 220 1/16W Metal Oxide | AA |
| R6418 | VRS-CZ1JF223J | | 22k 1/16W Metal Oxide | AA |
| R6419 | VRS-CZ1JF473J | | 47k 1/16W Metal Oxide | AA |
| R6452 | VRS-CZ1JF821J | | 820 1/16W Metal Oxide | AA |
| R6456 | VRS-CZ1JF243J | | 24k 1/16W Metal Oxide | AA |
| R6457 | VRS-CZ1JF153J | | 15k 1/16W Metal Oxide | AA |
| R7401 | VRS-CZ1JF471J | | 470 1/16W Metal Oxide | AA |
| R7402 | VRS-CZ1JF471J | | 470 1/16W Metal Oxide | AA |
| R7404 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R7405 | VRS-CZ1JF151J | | 150 1/16W Metal Oxide | AA |
| R7406 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R7407 | VRS-CZ1JF471J | | 470 1/16W Metal Oxide | AA |
| R7408 | VRS-CZ1JF222J | | 2.2k 1/16W Metal Oxide | AA |
| R7409 | VRS-CZ1JF152J | | 1.5k 1/16W Metal Oxide | AA |
| R7410 | VRS-CZ1JF152J | | 1.5k 1/16W Metal Oxide | AA |
| R7411 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R7413 | VRS-CZ1JF122J | | 1.2k 1/16W Metal Oxide | AA |
| R7414 | VRS-CZ1JF221J | | 220 1/16W Metal Oxide | AA |
| R7415 | VRS-CZ1JF681J | | 680 1/16W Metal Oxide | AA |
| R7416 | VRS-CZ1JF222J | | 2.2k 1/16W Metal Oxide | AA |
| R7417 | VRS-CZ1JF561J | | 560 1/16W Metal Oxide | AA |
| R7419 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R7421 | VRS-CZ1JF273J | | 27k 1/16W Metal Oxide | AA |
| R7422 | VRS-CZ1JF183J | | 18k 1/16W Metal Oxide | AA |
| R7423 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R7424 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R7426 | VRS-CZ1JF271J | | 270 1/16W Metal Oxide | AA |
| R7454 | VRS-CZ1JF331J | | 330 1/16W Metal Oxide | AA |
| R7455 | VRS-CZ1JF000J | | 0 1/16W Metal Oxide | AA |
| R7456 | VRS-CZ1JF152J | | 1.5k 1/16W Metal Oxide | AA |
| R7459 | VRS-CZ1JF391J | | 390 1/16W Metal Oxide | AA |
| R7460 | VRS-CZ1JF271J | | 270 1/16W Metal Oxide | AA |
| R7461 | VRS-CZ1JF152J | | 1.5k 1/16W Metal Oxide | AA |
| R7462 | VRS-CZ1JF681J | | 680 1/16W Metal Oxide | AA |
| R7463 | VRS-CZ1JF561J | | 560 1/16W Metal Oxide | AA |
| R7464 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R7466 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R7467 | VRS-CZ1JF333J | | 33k 1/16W Metal Oxide | AA |
| R7468 | VRS-CZ1JF223J | | 22k 1/16W Metal Oxide | AA |
| R7469 | VRS-CZ1JF223J | | 22k 1/16W Metal Oxide | AA |
| R7470 | VRS-CZ1JF153J | | 15k 1/16W Metal Oxide | AA |
| R7471 | VRS-CZ1JF000J | | 0 1/16W Metal Oxide | AA |
| R8401 | VRS-CZ1JF181J | | 180 1/16W Metal Oxide | AA |
| R8402 | VRS-CZ1JF333J | | 33k 1/16W Metal Oxide | AA |
| R8403 | VRS-CZ1JF333J | | 33k 1/16W Metal Oxide | AA |
| R8404 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R8407 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R8412 | VRS-CZ1JF471J | | 470 1/16W Metal Oxide | AA |
| R8413 | VRS-CZ1JF471J | | 470 1/16W Metal Oxide | AA |
| R8416 | VRS-CZ1JF821J | | 820 1/16W Metal Oxide | AA |
| R8417 | VRS-CZ1JF821J | | 820 1/16W Metal Oxide | AA |
| R8418 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R8419 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R8421 | VRS-CZ1JF471J | | 470 1/16W Metal Oxide | AA |
| R8422 | VRS-CZ1JF471J | | 470 1/16W Metal Oxide | AA |
| R8451 | VRS-CZ1JF471J | | 470 1/16W Metal Oxide | AA |
| R8452 | VRS-CZ1JF222J | | 2.2k 1/16W Metal Oxide | AA |
| R8453 | VRS-CZ1JF152J | | 1.5k 1/16W Metal Oxide | AA |
| R8454 | VRS-CZ1JF392J | | 3.9k 1/16W Metal Oxide | AA |
| R8455 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R8456 | VRS-CZ1JF821J | | 820 1/16W Metal Oxide | AA |
| R8457 | VRS-CZ1JF122J | | 1.2k 1/16W Metal Oxide | AA |
| R8458 | VRS-CZ1JF681D | | 680 1/16W Metal Oxide | AB |
| R8459 | VRS-CZ1JF181J | | 180 1/16W Metal Oxide | AA |
| R8460 | VRS-CZ1JF102D | | 1k 1/16W Metal Oxide | AA |
| R8461 | VRS-CZ1JF821J | | 820 1/16W Metal Oxide | AA |
| R8462 | VRS-CZ1JF183J | | 18k 1/16W Metal Oxide | AA |
| R8463 | VRS-CZ1JF103J | | 10k 1/16W Metal Oxide | AA |
| R8464 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R8467 | VRS-CZ1JF331D | | 330 1/16W Metal Oxide | AA |
| R9410 | VRS-CZ1JF000J | | 0 1/16W Metal Oxide | AA |

### BALUNES

| | | | |
|---|---|---|---|
| FB151 | RBLN-0107TAZZ | Balun, BLN-0107TA | AB |
| FB152 | RBLN-0107TAZZ | Balun, BLN-0107TA | AB |
| FB3800 | RBLN-0028TAZZ | Balun, BLN-0028TA | AB |

### MISCELLANEOUS PARTS

| | | | |
|---|---|---|---|
| | PSLDM3238TAFW | Shield | AC |
| | PSLDM3239TAFW | Shield | AC |
| | PSLDM3344TAFW | Shield | AC |
| | PZETV0412TAZZ | Insulator | AD |
| CN701 | QPLGN0263TAZZ | Plug, 2Pin | AB |
| CN702 | QPLGN0264TAZZ | Plug, 2Pin | AC |
| CN703 | QSOCN0860TAZZ | Socket, 8Pin | AE |
| CN3601 | QSOCN1207REN1 | Socket, 12Pin | AD |
| CN3800 | QSOCN2471TAZZ | Socket, 24Pin | AE |
| CN7401 | QCNCM7068TAZZ | Connector, 70Pin | AG |
| CN9401 | QSOCN1860TAZZ | Socket, 18Pin | AE |
| ⚠ CP901 | QFS-L2526TAZZ | Fuse, 2.5A 64V | AC |
| ⚠ CP902 | QFS-L2526TAZZ | Fuse, 2.5A 64V | AC |
| ⚠ CP903 | QFS-L2526TAZZ | Fuse, 2.5A 64V | AC |
| P601 | QPLGN0263TAZZ | Plug, 2Pin | AB |
| P902 | QPLGN0364TAZZ | Plug, 3Pin | AC |
| P2901 | QPLGN0664TAZZ | Plug, 6Pin | AD |
| P2902 | QPLGN0764TAZZ | Plug, 7Pin | AD |
| SC151 | QSOCN2071TAZZ | Socket, 20Pin | AD |
| SC152 | QSOCN2471TAZZ | Socket, 24Pin | AE |
| SC901 | QSOCN0772TAZZ | Socket, 7Pin | AC |

## DUNTK2934QA00
## CAMERA UNIT

### INTEGRATED CIRCUITS

| | | | |
|---|---|---|---|
| IC11 | VHiUPD16510-1 | UPD16510, V-Driver | AR |
| IC12 | VHiLR38590/-1 | LR38590, Timing Generator | AR |
| IC101 | VHiCXA2006Q-1 | CXA2006Q, CDS/AGC | AV |
| IC102 | VHiMB88146A-1 | MB88146A, D/A Converter | AH |
| IC551 | VHiUPD16835-1 | UPD16835 | AM |
| IC552 | VHiNJM2902V-1 | NJM2902V, OP-Amp | AD |
| IC553 | VHiNJM3414V-1 | NJM3414V, OP-Amp | AF |
| IC554 | VHiTVHC74T/-1 | TVHC74T | AF |

### TRANSISTORS

| | | | |
|---|---|---|---|
| Q11 | VSHN2C01FU/-1 | HN2C01FU | AC |
| Q12 | VS2SA1989R/-1 | 2SA1989R | AB |

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| Q13 | VS2SC5383F/-1 | | 2SC5383F | AB |
| Q14 | VS2SC5383F/-1 | | 2SC5383F | AB |
| Q15 | VS2SA1989R/-1 | | 2SA1989R | AB |
| Q551 | VSRN1902///-1 | | RN1902 | AC |
| | | | **DIODE** | |
| D551 | VHDMA132K//-1 | | MA132K | AA |
| | | | **PACKAGED CIRCUIT** | |
| X11 | RCRSC0172TAZZ | | Crystal, CRSC0172TA | AG |
| | | | **TRANSFORMERS** | |
| L11 | VPBWM100KR50N | | Peaking, 10µH | AC |
| L12 | VPBWM470K2R6N | | Peaking, 47µH | AC |
| L13 | VPD9M470J6R6N | | Peaking, 47µH | AC |
| L101 | VPBWM100KR50N | | Peaking, 10µH | AC |
| L551 | VPBWM220K1R2N | | Peaking, 22µH | AC |
| L553 | VPBWM100KR50N | | Peaking, 10µH | AC |
| | | | **CAPACITORS** | |
| C11 | VCKYCZ1HF103Z | | 0.01 50V Ceramic | AB |
| C12 | VCKYCZ1HF103Z | | 0.01 50V Ceramic | AB |
| C13 | VCKYCY1HB103K | | 0.01 50V Ceramic | AA |
| C14 | VCSATA1DJ475M | | 4.7 20V Tantalum | AC |
| C15 | VCKYCZ1HF103Z | | 0.01 50V Ceramic | AB |
| C16 | VCKYCZ1HF103Z | | 0.01 50V Ceramic | AB |
| C17 | VCSATE1VJ335M | | 3.3 35V Tantalum | AD |
| C18 | VCKYCZ1HF103Z | | 0.01 50V Ceramic | AB |
| C20 | VCSATA1AJ106M | | 10 10V Tantalum | AC |
| C21 | VCKYCZ1AF104Z | | 0.1 10V Ceramic | AB |
| C22 | VCKYCZ1HF103Z | | 0.01 50V Ceramic | AB |
| C23 | VCSATA1AJ106M | | 10 10V Tantalum | AC |
| C24 | VCKYCZ1HF103Z | | 0.01 50V Ceramic | AB |
| C25 | VCKYCZ1HB102K | | 1000p 50V Ceramic | AB |
| C26 | VCSATA1AJ106M | | 10 10V Tantalum | AC |
| C27 | VCKYCZ1CB103K | | 0.01 16V Ceramic | AB |
| C28 | VCCCCY1HH270G | | 27p 50V Ceramic | AB |
| C29 | VCSATE1VJ335M | | 3.3 35V Tantalum | AD |
| C30 | VCKYCZ1HB102K | | 1000p 50V Ceramic | AB |
| C33 | VCCCCY1HH360G | | 36p 50V Ceramic | AB |
| C34 | VCCCCY1HH180G | | 18p 50V Ceramic | AB |
| C35 | VCKYCZ1CB103K | | 0.01 16V Ceramic | AB |
| C36 | VCKYCZ1CB103K | | 0.01 16V Ceramic | AB |
| C37 | VCSATA1AJ106M | | 10 10V Tantalum | AC |
| C38 | VCKYCY0JB105K | | 1 6.3V Ceramic | AC |
| C101 | VCKYTV1AB105K | | 1 10V Ceramic | AD |
| C102 | VCKYTV1AB105K | | 1 10V Ceramic | AD |
| C103 | VCKYCZ1HF103Z | | 0.01 50V Ceramic | AB |
| C104 | VCKYCZ1AF104Z | | 0.1 10V Ceramic | AB |
| C105 | VCKYCZ1EF223Z | | 0.022 25V Ceramic | AB |
| C106 | VCKYCZ1HF103Z | | 0.01 50V Ceramic | AB |
| C107 | VCKYCZ1AF104Z | | 0.1 10V Ceramic | AB |
| C108 | VCSATA1AJ106M | | 10 10V Tantalum | AC |
| C109 | VCKYCZ1HF103Z | | 0.01 50V Ceramic | AB |
| C110 | VCKYCZ1AF104Z | | 0.1 10V Ceramic | AB |
| C111 | VCSATA1AJ106M | | 10 10V Tantalum | AC |
| C112 | VCKYCZ1AF104Z | | 0.1 10V Ceramic | AB |
| C113 | VCSATA1AJ106M | | 10 10V Tantalum | AC |
| C114 | VCKYCZ1AF104Z | | 0.1 10V Ceramic | AB |
| C115 | VCSATA1AJ106M | | 10 10V Tantalum | AC |
| C116 | VCKYCZ1AF104Z | | 0.1 10V Ceramic | AB |
| C117 | VCCCCZ1HH150J | | 15p 50V Ceramic | AB |
| C118 | VCKYCZ1AB104K | | 0.1 10V Ceramic | AB |
| C119 | VCKYCZ1HB471K | | 470p 50V Ceramic | AB |
| C120 | VCKYCZ1AF104Z | | 0.1 10V Ceramic | AB |
| C551 | VCKYCZ1HF103Z | | 0.01 50V Ceramic | AB |
| C552 | VCKYCZ1HF103Z | | 0.01 50V Ceramic | AB |
| C553 | VCKYCZ1HF103Z | | 0.01 50V Ceramic | AB |
| C554 | VCCCCZ1HH330J | | 33p 50V Ceramic | AB |
| C555 | VCKYCZ1HF103Z | | 0.01 50V Ceramic | AB |
| C556 | VCKYCZ1HF103Z | | 0.01 50V Ceramic | AB |
| C558 | VCKYCZ1HF103Z | | 0.01 50V Ceramic | AB |
| C559 | VCKYCZ1HF103Z | | 0.01 50V Ceramic | AB |
| C560 | VCSATE1CJ156M | | 15 16V Tantalum | AD |
| C561 | VCKYCZ1HF103Z | | 0.01 50V Ceramic | AB |
| C562 | VCKYCZ1HF103Z | | 0.01 50V Ceramic | AB |
| C563 | VCSATA1AJ106M | | 10 10V Tantalum | AC |
| C565 | VCSATA1AJ106M | | 10 10V Tantalum | AC |
| C566 | VCKYCZ1HF103Z | | 0.01 50V Ceramic | AB |
| C567 | VCKYCZ1HF103Z | | 0.01 50V Ceramic | AB |
| C568 | VCKYCZ1HF103Z | | 0.01 50V Ceramic | AB |
| C569 | VCKYCZ1AF104Z | | 0.1 10V Ceramic | AB |
| C570 | VCKYCZ1HF103Z | | 0.01 50V Ceramic | AB |
| C571 | VCKYCZ1HF103Z | | 0.01 50V Ceramic | AB |
| C572 | VCCCCZ1HH151J | | 150p 50V Ceramic | AB |
| C573 | VCKYCY1AF105Z | | 1 10V Ceramic | AC |
| C574 | VCKYCZ1HF103Z | | 0.01 50V Ceramic | AB |
| C575 | VCKYCZ1HF103Z | | 0.01 50V Ceramic | AB |
| | | | **RESISTORS** | |
| R17 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R18 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R19 | VRS-CZ1JF222J | | 2.2k 1/16W Metal Oxide | AA |
| R20 | VRS-CZ1JF822J | | 8.2k 1/16W Metal Oxide | AA |
| R21 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R23 | VRS-CZ1JF330J | | 33 1/16W Metal Oxide | AA |
| R27 | VRS-CZ1JF820J | | 82 1/16W Metal Oxide | AA |
| R28 | VRS-CZ1JF105J | | 1M 1/16W Metal Oxide | AA |
| R30 | VRS-CZ1JF820J | | 82 1/16W Metal Oxide | AA |
| R31 | VRS-CZ1JF471J | | 470 1/16W Metal Oxide | AA |
| R33 | VRS-CZ1JF102D | | 1k 1/16W Metal Oxide | AA |
| R35 | VRS-CZ1JF333D | | 33k 1/16W Metal Oxide | AB |
| R36 | VRS-CZ1JF103D | | 10k 1/16W Metal Oxide | AB |
| R37 | VRS-CZ1JF102D | | 1k 1/16W Metal Oxide | AA |
| R38 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R39 | VRS-CZ1JF333D | | 33k 1/16W Metal Oxide | AB |
| R40 | VRS-CZ1JF153D | | 15k 1/16W Metal Oxide | AB |
| R41 | VRS-CZ1JF223D | | 22k 1/16W Metal Oxide | AB |
| R100 | VRS-CZ1JF473J | | 47k 1/16W Metal Oxide | AA |
| R103 | VRS-CZ1JF153D | | 15k 1/16W Metal Oxide | AB |
| R104 | VRS-CZ1JF273J | | 27k 1/16W Metal Oxide | AA |
| R105 | VRS-CZ1JF244D | | 240k 1/16W Metal Oxide | AA |
| R106 | VRS-CZ1JF682J | | 6.8k 1/16W Metal Oxide | AA |
| R107 | VRS-CZ1JF223J | | 22k 1/16W Metal Oxide | AA |
| R108 | VRS-CZ1JF563J | | 56k 1/16W Metal Oxide | AA |
| R109 | VRS-CZ1JF224J | | 220k 1/16W Metal Oxide | AA |
| R110 | VRS-CZ1JF224J | | 220k 1/16W Metal Oxide | AA |
| R150 | VRS-CZ1JF473J | | 47k 1/16W Metal Oxide | AA |
| R551 | VRS-CZ1JF103J | | 10k 1/16W Metal Oxide | AA |
| R552 | VRS-CZ1JF133J | | 13k 1/16W Metal Oxide | AA |
| R553 | VRS-CZ1JF103J | | 10k 1/16W Metal Oxide | AA |
| R554 | VRS-CZ1JF104J | | 100k 1/16W Metal Oxide | AA |
| R555 | VRS-TV1JD5R6J | | 5.6 1/16W Metal Oxide | AA |
| R556 | VRS-TV1JD5R6J | | 5.6 1/16W Metal Oxide | AA |
| R557 | VRS-TV1JD5R6J | | 5.6 1/16W Metal Oxide | AA |
| R558 | VRS-TV1JD5R6J | | 5.6 1/16W Metal Oxide | AA |
| R559 | VRS-CZ1JF223J | | 22k 1/16W Metal Oxide | AA |
| R560 | VRS-CZ1JF223J | | 22k 1/16W Metal Oxide | AA |
| R561 | VRS-CZ1JF103J | | 10k 1/16W Metal Oxide | AA |
| R562 | VRS-CZ1JF682J | | 6.8k 1/16W Metal Oxide | AA |
| R563 | VRS-CZ1JF392J | | 3.9k 1/16W Metal Oxide | AA |
| R564 | VRS-CZ1JF103J | | 10k 1/16W Metal Oxide | AA |
| R565 | VRS-CZ1JF912J | | 9.1k 1/16W Metal Oxide | AB |
| R566 | VRS-CZ1JF104J | | 100k 1/16W Metal Oxide | AA |
| R567 | VRS-CZ1JF393J | | 39k 1/16W Metal Oxide | AA |
| R568 | VRS-CZ1JF102J | | 1k 1/16W Metal Oxide | AA |
| R569 | VRS-CZ1JF562J | | 5.6k 1/16W Metal Oxide | AA |
| R570 | VRS-CZ1JF103J | | 10k 1/16W Metal Oxide | AA |
| R571 | VRS-CZ1JF474J | | 470k 1/16W Metal Oxide | AA |
| R572 | VRS-CZ1JF334D | | 330k 1/16W Metal Oxide | AA |
| R573 | VRS-CZ1JF221J | | 220 1/16W Metal Oxide | AA |
| R574 | VRS-CZ1JF221J | | 220 1/16W Metal Oxide | AA |
| R575 | VRS-CZ1JF103D | | 10k 1/16W Metal Oxide | AB |
| R576 | VRS-CZ1JF122J | | 1.2k 1/16W Metal Oxide | AA |
| R577 | VRS-CZ1JF472J | | 4.7k 1/16W Metal Oxide | AA |
| R578 | VRS-CZ1JF222J | | 2.2k 1/16W Metal Oxide | AA |
| R579 | VRS-CZ1JF103J | | 10k 1/16W Metal Oxide | AA |
| R580 | VRS-CZ1JF474J | | 470k 1/16W Metal Oxide | AA |
| R581 | VRS-CZ1JF682J | | 6.8k 1/16W Metal Oxide | AA |
| R582 | VRS-CZ1JF682J | | 6.8k 1/16W Metal Oxide | AA |

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| R583 | VRS-CZ1JF103J | | 10k 1/16W Metal Oxide | AA |
| R584 | VRS-CZ1JF272D | | 2.7k 1/16W Metal Oxide | AB |
| R585 | VRS-CZ1JF153D | | 15k 1/16W Metal Oxide | AB |
| R586 | VRS-CZ1JF244D | | 240k 1/16W Metal Oxide | AA |
| R587 | VRS-CZ1JF103J | | 10k 1/16W Metal Oxide | AA |
| R588 | VRS-CZ1JF471J | | 470 1/16W Metal Oxide | AA |
| R589 | VRS-CZ1JF471J | | 470 1/16W Metal Oxide | AA |
| | | | **BALUNES** | |
| FB101 | RBLN-0056TAZZ | | Balun, BLN-0056TA | AC |
| FB102 | RBLN-0056TAZZ | | Balun, BLN-0056TA | AC |
| FB103 | RBLN-0056TAZZ | | Balun, BLN-0056TA | AC |
| FB104 | RBLN-0056TAZZ | | Balun, BLN-0056TA | AC |
| FB105 | RBLN-0056TAZZ | | Balun, BLN-0056TA | AC |
| FB106 | RBLN-0056TAZZ | | Balun, BLN-0056TA | AC |
| FB107 | RBLN-0056TAZZ | | Balun, BLN-0056TA | AC |
| FB109 | RBLN-0107TAZZ | | Balun, BLN-0107TA | AB |
| FB110 | RBLN-0107TAZZ | | Balun, BLN-0107TA | AB |
| | | | **MISCELLANEOUS PARTS** | |
| | PSLDM3346TAFW | | Shield | AC |
| | PSLDM3347TAFW | | Shield | AC |
| P101 | QPLGN0258REZZ | | Plug, 2Pin | AD |
| SC11 | QSOCN1972TAZZ | | Socket, 19Pin | AD |
| SC101 | QSOCN0860TAZZ | | Socket, 8Pin | AE |
| SC102 | QSOCN2471TAZZ | | Socket, 24Pin | AE |
| SC103 | QSOCN2072TAZZ | | Socket, 20Pin | AD |
| SC551 | QSOCN2071TAZZ | | Socket, 20Pin | AD |

## DUNTK2936QA00
## HEAD AMP UNIT

The part no. of the head amplifier used in the VL-AH60U, manufactured in Japan is RAMP-0034TAN0, but it is equal to DUNTK2936QA00 used in other models in performance. Therefore, use DUNTK2936QA00 when servicing it.

| | | | |
|---|---|---|---|
| | | **INTEGRATED CIRCUITS** | |
| IC301 | VHiCXA2032Q-1 | CXA2032Q, Head Amp Process | AN |
| IC3701 | VHiLB11952W-1 | LB11952W | AV |
| | | **TRANSISTORS** | |
| Q302 | VS2SC5384C/-1 | 2SC5384C | AB |
| Q307 | VS2SC5384C/-1 | 2SC5384C | AB |
| Q315 | VSRN1704///-1 | RN1704 | AC |
| Q341 | VS2SA1037KQ-1 | 2SA1037KQ | AA |
| Q342 | VS2SA1037KQ-1 | 2SA1037KQ | AA |
| Q343 | VSRT1N441U/-1 | RT1N441U | AB |
| | | **COILS** | |
| L303 | VPCCM101K2R1N | Peaking, 100µH | AC |
| L304 | VPCCM470KR95N | Peaking, 47µH | AC |
| L305 | VPCQM101K4R3N | Peaking, 100µH | AB |
| L341 | VPD9M100J1R7N | Peaking, 10µH | AC |
| L342 | VPD9M151J170N | Peaking, 150µH | AC |
| L3701 | VPCCM4R7MR13N | Peaking, 4.7µH | AB |
| L3702 | VPCCM4R7MR13N | Peaking, 4.7µH | AB |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | **CAPACITORS** | | | |
| C302 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | | AB |
| C304 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | | AB |
| C305 | VCSATA1AJ156M | 15 | 10V | Tantalum | | AD |
| C306 | VCSATA1AJ156M | 15 | 10V | Tantalum | | AD |
| C309 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | | AB |
| C310 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | | AB |
| C311 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | | AB |
| C313 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | | AB |
| C314 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | | AB |
| C315 | VCKYCY1CB104K | 0.1 | 16V | Ceramic | | AB |
| C318 | VCKYCY1EB103K | 0.01 | 25V | Ceramic | | AA |
| C319 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | | AB |
| C320 | VCKYCZ1CB223K | 0.022 | 16V | Ceramic | | AC |
| C321 | VCSATA1AJ156M | 15 | 10V | Tantalum | | AD |
| C322 | VCKYCZ1CB223K | 0.022 | 16V | Ceramic | | AC |
| C323 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | | AB |
| C324 | VCKYCZ1AB104K | 0.1 | 10V | Ceramic | | AB |
| C325 | VCSATA1AJ156M | 15 | 10V | Tantalum | | AD |
| C326 | VCKYCY1EB103K | 0.01 | 25V | Ceramic | | AA |
| C340 | VCCCCZ1HH101J | 100p | 50V | Ceramic | | AB |
| C341 | VCCCCZ1HH151J | 150p | 50V | Ceramic | | AB |
| C342 | VCCCCZ1HH101J | 100p | 50V | Ceramic | | AB |
| C344 | VCKYCY1CB104K | 0.1 | 16V | Ceramic | | AB |
| C345 | VCKYCZ1CB103K | 0.01 | 16V | Ceramic | | AB |
| C346 | VCKYCZ1HB102K | 1000p | 50V | Ceramic | | AB |
| C347 | VCSATA1AJ156M | 15 | 10V | Tantalum | | AD |
| C349 | VCCCCZ1HH680J | 68p | 50V | Ceramic | | AB |
| C3702 | VCKYCZ1EB682k | 6800p | 25V | Ceramic | | AB |
| C3703 | VCKYCZ1AB104K | 0.1 | 10V | Ceramic | | AB |
| C3704 | VCKYCZ1AB104K | 0.1 | 10V | Ceramic | | AB |
| C3705 | VCKYCZ1HB102K | 1000p | 50V | Ceramic | | AB |
| C3706 | VCKYCZ1HB102K | 1000p | 50V | Ceramic | | AB |
| C3707 | VCKYCZ1AB104K | 0.1 | 10V | Ceramic | | AB |
| C3708 | VCKYCZ1AB104K | 0.1 | 10V | Ceramic | | AB |
| C3709 | VCKYCY1AF105Z | 1 | 10V | Ceramic | | AC |
| C3710 | VCKYCZ1AB104K | 0.1 | 10V | Ceramic | | AB |
| C3711 | VCKYCY1AF105Z | 1 | 10V | Ceramic | | AC |
| C3712 | VCKYCZ1AB104K | 0.1 | 10V | Ceramic | | AB |
| C3713 | VCKYCZ1AB104K | 0.1 | 10V | Ceramic | | AB |
| C3714 | VCSATA1CJ106M | 10 | 16V | Tantalum | | AD |
| C3715 | VCKYCZ1AB104K | 0.1 | 10V | Ceramic | | AB |
| C3716 | VCKYCZ1AB104K | 0.1 | 10V | Ceramic | | AB |
| C3717 | VCKYCY1AF105Z | 1 | 10V | Ceramic | | AC |
| C3718 | VCKYCZ1AB104K | 0.1 | 10V | Ceramic | | AB |
| C3719 | VCKYCZ1EB682K | 6800p | 25V | Ceramic | | AB |
| C3720 | VCKYCZ1AB104K | 0.1 | 10V | Ceramic | | AB |
| C3721 | VCKYCZ1EB682K | 6800p | 25V | Ceramic | | AB |
| C3722 | VCKYCZ1EB682K | 6800p | 25V | Ceramic | | AB |
| C3723 | VCKYCY1CF474Z | 0.47 | 16V | Ceramic | | AB |
| C3724 | VCKYCY1CF474Z | 0.47 | 16V | Ceramic | | AB |
| C3725 | VCKYCY1AF105Z | 1 | 10V | Ceramic | | AC |
| C3726 | VCKYCY1CF474Z | 0.47 | 16V | Ceramic | | AB |
| C3727 | VCCCCZ1HH101J | 100p | 50V | Ceramic | | AB |
| C3728 | VCCCCZ1HH101J | 100p | 50V | Ceramic | | AB |
| C3729 | VCKYCZ1HF103Z | 0.01 | 50V | Ceramic | | AB |
| C3730 | VCKYCZ1AB473K | 0.047 | 10V | Ceramic | | AB |
| C3731 | VCKYCZ1EB472K | 4700p | 25V | Ceramic | | AB |
| C3732 | VCKYCZ1AB104K | 0.1 | 10V | Ceramic | | AB |
| C3733 | VCSATA1CJ106M | 10 | 16V | Tantalum | | AD |
| C3734 | VCSATA1CJ106M | 10 | 16V | Tantalum | | AD |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | **RESISTORS** | | | |
| R301 | VRS-CZ1JF473J | 47k | 1/16W | Metal Oxide | | AA |
| R302 | VRS-CY1JF273J | 27k | 1/16W | Metal Oxide | | AA |
| R303 | VRS-CZ1JF152J | 1.5k | 1/16W | Metal Oxide | | AA |
| R305 | VRS-CZ1JF000J | 0 | 1/16W | Metal Oxide | | AA |
| R307 | VRS-CZ1JF000J | 0 | 1/16W | Metal Oxide | | AA |
| R308 | VRS-CZ1JF392J | 3.9k | 1/16W | Metal Oxide | | AA |
| R313 | VRS-CZ1JF183J | 18k | 1/16W | Metal Oxide | | AA |
| R316 | VRS-CZ1JF103J | 10k | 1/16W | Metal Oxide | | AA |
| R317 | VRS-CZ1JF103J | 10k | 1/16W | Metal Oxide | | AA |
| R321 | VRS-CZ1JF152J | 1.5k | 1/16W | Metal Oxide | | AA |
| R323 | VRS-CZ1JF473J | 47k | 1/16W | Metal Oxide | | AA |
| R329 | VRS-CZ1JF471J | 470 | 1/16W | Metal Oxide | | AA |
| R331 | VRS-CZ1JF102J | 1k | 1/16W | Metal Oxide | | AA |
| R335 | VRS-CY1JF273J | 27k | 1/16W | Metal Oxide | | AA |
| R337 | VRS-CZ1JF181J | 180 | 1/16W | Metal Oxide | | AA |
| R338 | VRS-CZ1JF181J | 180 | 1/16W | Metal Oxide | | AA |
| R340 | VRS-CZ1JF680J | 68 | 1/16W | Metal Oxide | | AB |
| R341 | VRS-CZ1JF272D | 2.7k | 1/16W | Metal Oxide | | AB |
| R342 | VRS-CZ1JF271J | 270 | 1/16W | Metal Oxide | | AA |
| R343 | VRS-CZ1JF221J | 220 | 1/16W | Metal Oxide | | AA |
| R344 | VRS-CZ1JF223J | 22k | 1/16W | Metal Oxide | | AA |
| R345 | VRS-CZ1JF333J | 33k | 1/16W | Metal Oxide | | AA |
| R359 | VRS-CY1JF105J | 1M | 1/16W | Metal Oxide | | AA |

| Ref. No. | Part No. | ★ | Description | | | Code |
|---|---|---|---|---|---|---|
| R360 | VRS-CZ1JF103J | | 10k | 1/16W | Metal Oxide | AA |
| R361 | VRS-CZ1JF103J | | 10k | 1/16W | Metal Oxide | AA |
| R362 | VRS-CY1JF182F | | 1.8k | 1/16W | Metal Oxide | AA |
| R363 | VRS-CZ1JF102J | | 1k | 1/16W | Metal Oxide | AA |
| R3701 | VRS-CZ1JF182J | | 1.8k | 1/16W | Metal Oxide | AA |
| R3702 | VRS-CZ1JF122J | | 1.2k | 1/16W | Metal Oxide | AA |
| R3703 | VRS-CZ1JF182J | | 1.8k | 1/16W | Metal Oxide | AA |
| R3704 | VRS-CZ1JF122J | | 1.2k | 1/16W | Metal Oxide | AA |
| R3705 | VRS-CZ1JF103J | | 10k | 1/16W | Metal Oxide | AA |
| R3706 | VRS-CZ1JF103J | | 10k | 1/16W | Metal Oxide | AA |
| R3707 | VRS-CZ1JF103J | | 10k | 1/16W | Metal Oxide | AA |
| R3708 | VRS-CZ1JF103J | | 10k | 1/16W | Metal Oxide | AA |
| R3715 | VRS-CZ1JF103J | | 10k | 1/16W | Metal Oxide | AA |
| R3716 | VRS-CZ1JF103J | | 10k | 1/16W | Metal Oxide | AA |
| R3717 | VRS-TV1JD1R0J | | 1 | 1/16W | Metal Oxide | AA |
| R3718 | VRS-TV1JD1R0J | | 1 | 1/16W | Metal Oxide | AA |
| R3719 | VRS-TV1JD1R0J | | 1 | 1/16W | Metal Oxide | AA |
| R3720 | VRS-TV1JD1R0J | | 1 | 1/16W | Metal Oxide | AA |
| R3721 | VRS-CZ1JF473J | | 47k | 1/16W | Metal Oxide | AA |
| R3722 | VRS-CZ1JF102J | | 1k | 1/16W | Metal Oxide | AA |
| R3723 | VRS-CZ1JF105J | | 1M | 1/16W | Metal Oxide | AA |
| R3724 | VRS-CZ1JF223J | | 22k | 1/16W | Metal Oxide | AA |
| R3725 | VRS-CZ1JF102J | | 1k | 1/16W | Metal Oxide | AA |
| R3726 | VRS-CZ1JF102J | | 1k | 1/16W | Metal Oxide | AA |
| R3727 | VRS-CZ1JF473J | | 47k | 1/16W | Metal Oxide | AA |
| R3728 | VRS-CZ1JF473J | | 47k | 1/16W | Metal Oxide | AA |
| R3729 | VRS-CZ1JF223J | | 22k | 1/16W | Metal Oxide | AA |
| R3731 | VRS-CZ1JF103J | | 10k | 1/16W | Metal Oxide | AA |
| R3732 | VRS-CZ1JF393J | | 39k | 1/16W | Metal Oxide | AA |
| R3733 | VRS-CZ1JF393J | | 39k | 1/16W | Metal Oxide | AA |

### MISCELLANEOUS PARTS

| | | | |
|---|---|---|---|
| | PSLDM0106AJFW | Shield | AC |
| CN3701 | QSOCN1085TAZZ | Socket, 10Pin | AE |
| CN3702 | QSOCN1560TAZZ | Socket, 15Pin | AE |
| CN3703 | QSOCN1871TAZZ | Socket, 18Pin | AE |
| SC301 | QSOCN0985TAZZ | Socket, 9Pin | AE |
| SC304 | QSOCN0671TAZZ | Socket, 6Pin | AC |
| SC305 | QCNCW7068TAZZ | Connector, 70Pin | AG |

## DUNTK2800PM03
## CCD UNIT

### INTEGRATED CIRCUIT

| | | | |
|---|---|---|---|
| IC2 | VHiM24C08W6-1 | M24C08W6, E²PROM | AH |

### TRANSISTOR

| | | | |
|---|---|---|---|
| Q1 | VS2SC4627CD-1 | 2SC4627CD | AB |

### CAPACITORS

| | | | | | |
|---|---|---|---|---|---|
| C1 | VCKYCY1HB102K | 1000p | 50V | Ceramic | AA |
| C2 | VCCCCY1HH2R0C | 2p | 50V | Ceramic | AA |
| C3 | VCKYTV1HF103Z | 0.01 | 50V | Ceramic | AA |
| C4 | VCCCCY1HH221J | 220p | 50V | Ceramic | AA |
| C5 | VCKYTQ1CF225Z | 2.2 | 16V | Ceramic | AB |
| C6 | VCKYCY1HF103Z | 0.01 | 50V | Ceramic | AA |

### RESISTORS

| | | | | | |
|---|---|---|---|---|---|
| R1 | VRS-CY1JF105J | 1M | 1/16W | Metal Oxide | AA |
| R2 | VRS-CY1JF101J | 100 | 1/16W | Metal Oxide | AA |
| R3 | VRS-CY1JF472J | 4.7k | 1/16W | Metal Oxide | AA |
| R4 | VRS-CY1JF101J | 100 | 1/16W | Metal Oxide | AA |
| R5 | VRS-CY1JF105J | 1M | 1/16W | Metal Oxide | AA |

### MISCELLANEOUS PART

| | | | |
|---|---|---|---|
| SC1 | QSOCN1986TAZZ | Socket, 19Pin | AF |

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|

## MECHANISM PARTS

| | | | |
|---|---|---|---|
| 300 | LCHSM0163GEZZ | Main Chassis Ass'y | AW |
| 301 | NGERH1280GEZZ | Main Cam | AD |
| 302 | NGERH1281GEZZ | Sub-Cam | AD |
| 303 | MLEVF0470GEFW | Eject Lever | AD |
| 304 | MLEVF0492GEFW | M Function Lever | AF |
| 305 | LHLDZ1966GEZZ | L Block Holder | AD |
| 306 | NGERW1064GEZZ | Worm Pulley | AC |
| 307 | NGERW1065GEZZ | Worm | AD |
| 308 | NGERH1282GEZZ | Worm Wheel | AC |
| 309 | NGERH1283GEZZ | Lo Relay Gear | AC |
| 310 | MARMM0126GEZZ | S Lo Arm Ass'y | AF |
| 311 | MARMM0128GEZZ | T Lo Arm Ass'y | AG |
| 312 | LANGA0069GEFW | S Lo Arm Retainer | AD |
| 313 | PGiDM0146GEZZ | Sup Rail | AD |
| 314 | PGiDM0171GEZZ | Tu Rail | AD |
| 315 | NGERH1284GEZZ | Sup Lo Gear | AC |
| 316 | NGERH1285GEZZ | Tu Lo Gear | AC |
| 317 | MSPRD0167GEZZ | S Lo Arm Double-Acting Spring | AE |
| 318 | MSPRT0407GEZZ | T Lo Arm Double-Acting Spring | AC |
| 319 | MLEVP0310GEZZ | HC Lever Ass'y | AF |
| 321 | MSLiF0074GEFW | Ten Arm Operation Lever | AD |
| 322 | PGiDM0148GEZZ | Ten Arm Guide | AC |
| 323 | NGERH3061GEZZ | Segment Gear | AD |
| 324 | MLEVF0472GEZZ | Tu Guide Ass'y | AC |
| 325 | PGiDP0027GEZZ | Tu Guide | AE |
| 326 | MSPRC0183GEZZ | Tu Guide Spring | AA |
| 327 | MSPRC0184GEZZ | Si Roller Spring | AA |
| 328 | MSPRC0208GEZZ | Tu Guide Lever Spring | AC |
| 329 | LCHSS0052GEZZ | Slide Chassis Ass'y | AQ |
| 330 | MLEVF0495GEZZ | Ten Arm Ass'y | AC |
| 331 | LBNDK3036GEZZ | Ten Band Ass'y | AF |
| 332 | NiDR-0035GEZZ | Swing Gear Ass'y | AF |
| 333 | NGERH1286GEZZ | Driving Gear | AC |
| 334 | NGERH1287GEZZ | Pulley Gear | AD |
| 335 | NPLYV0157GEZZ | Relay Pulley | AD |
| 336 | MLEVP0284GEZZ | S Brake | AC |
| 337 | NGERH1288GEZZ | Tu Brake Gear | AC |
| 338 | MLEVP0285GEZZ | Tu Main Brake | AC |
| 339 | MLEVP0286GEZZ | Tu Sub-Brake | AC |
| 340 | MSPRD0169GEZZ | Tu Brake Spring | AD |
| 341 | LHLDZ2106GEZZ | Light Guide Holder Ass'y | AF |
| 342 | LANGG9102GEFW | Down Guide | AF |
| 343 | MSPRT0408GEZZ | Tension Spring | AD |
| 344 | MSPRD0186GEZZ | S Brake Spring | AD |
| 345 | DDRMW0038TEV1 | Upper/Lower Drum Ass'y | BK |
| 346 | PGiDM0154GEZZ | Tape Guide | AB |
| 348 | QBRSK0042GEZZ | Earth Spring | AC |
| 349 | PGiDM0182GEZZ | Drum Base | AF |
| 354 | MSPRC0209GEZZ | Gr Adjusting Spring | AC |
| 355 | LPOLM0058GEZZ | S Pole Base | AK |
| 356 | LPOLM0059GEZZ | T Pole Base | AK |
| 357 | NDAiV1071GEZZ | Sup Reel Support | AG |
| 358 | NDAiV1072GEZZ | Tu Reel Support | AG |
| 359 | MLEVF0517GEZZ | Pinch Lever Ass'y | AS |
| 360 | NBLTT0027GEZZ | Timing Belt S | AE |
| 361 | NBLTT0028GEZZ | Timing Belt L | AE |
| 362 | NROLP0127GEZZ | Guide Roller Ass'y | AG |
| 363 | NROLP0129GEZZ | Si Roller Ass'y | AG |
| 364 | QPWBH5428GEZZ | Mode FPC | AK |
| 365 | CPWBF6016GE01 | Sensor Ass'y | AT |
| 366 | QSW-M0042GEZZ | Recognition SW | AH |
| 367 | RDTCH0037GEZZ | Dew Sensor | AF |
| 368 | RMOTV1020GEZZ | Capstan Motor | AZ |
| 369 | RMOTM1075GEZZ | Load. Motor | AL |
| 370 | QSW-R0038GEZZ | Mode SW | AG |
| 372 | DUNTK2936QA00 | H/A PWB | — |
| 374 | TLABH0584GEZZ | Caution Label E | AB |
| 376 | PSHEP0013GEZZ | Interruption Sheet | AC |
| 202 | LX-BZ3175GEFN | Screw M1.7x4.0 | AC |
| 203 | LX-BZ3163GEFN | Screw M1.7x2.5 | AC |

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| 204 | LX-HZ3074GEFN | | Screw M1.7x5.3 S Tight | AA |
| 206 | LX-BZ3132GEFF | | Screw M1.4x1.5xD3.5 | AA |
| 207 | LX-BZ3178GEZZ | | Screw M1.4x1.5xD4.0 | AD |
| 208 | LX-HZ3083GEFF | | Screw M1.4x2.5 S Tight | AB |
| 209 | LX-HZ3077GEFN | | Screw M1.4x3.0 S Tight | AA |
| 211 | LX-HZ3084GEFF | | Screw M1.4x4.0 S Tight | AC |
| 212 | LX-HZ3116GEFD | | Screw M1.4x3.2 S Tight | AB |
| 213 | LX-NZ3053GEZZ | | Screw M1.4 Nut | AC |
| 214 | LX-WZ1076GE02 | | Washer D0.8xD3.0x0.2t Plastics | AA |
| 215 | LX-WZ1075GE02 | | Washer D2.1xD5.0x0.25t Plastics | AA |
| 216 | XWHJZ12-02040 | | Washer D1.2xD4.0x0.25t Plastics | AC |
| 217 | QCNW-1714TAZZ | | Ground Lead Wire | AC |

## CABINET PARTS LIST

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| 1 | DCABA6183LM01 | | V Frame Service | AL |
| 1-2 | PSPAG0095TAZZ | | VCR Lid Cushion | AA |
| 1-3 | TLABH0355TAZZ | | Lithium Label | AB |
| 1-4 | LHLDB1027TAZZ | | Lithium Holder | AD |
| 2 | DCABB6216LM03 | | L Cabinet Service (AH150U/UC) | AS |
| 2 | DCABB6218LM03 | | L Cabinet Service (AH160U) | AS |
| 2-2 | QEARP0262TAFW | | LCD Earth Panel (AH150U/UC) | AE |
| 2-2 | QEARP0264TAFW | | LCD Earth Panel (AH160U) | AE |
| 2-3 | TLABH0318TAZZ | | Turn Caution Label | AB |
| 2-4 | GCOVH1251TASA | | Jack Cover | AD |
| 2-5 | GCOVA1535TAZZ | | Remote Control Receptor Cover | AD |
| 2-6 | GCOVA1648TAZZ | | LED Cover | AC |
| 3 | CCABC6104TAK3 | | Camera Front Cabinet Ass'y | AP |
| 3-2 | GCOVA1654TASA | | Hood Cover | AF |
| 3-3 | GCOVA1653TASA | | Lens Hood | AK |
| 4 | DCABD6105LM04 | | Camera Rear Cabinet Service | AP |
| 4-2 | JBTN-0276TASA | | Camera Button | AD |
| 5 | DFTAC1302LM07 | | VCR Lid Service (AH150U/UC) | AR |
| 5 | DFTAC1302LM08 | | VCR Lid Service (AH160U) | AR |
| 5-2 | HDECP0094TASA | | VCR Lid Decoration Plate (AH150U/UC) | AE |
| 5-2 | HDECP0095TASA | | VCR Lid Decoration Plate (AH160U) | AE |
| 5-3 | LANGK0533TAFF | | VCR Lid Spring Angle | AC |
| 5-4 | LANGK0400TAFW | | Eject Fitting | AD |
| 5-5 | MSPRD0070TAFJ | | VCR Lid Spring | AC |
| 6 | DCOVA1647LM01 | | Camera Side Cover Service (AH150U/160U) | AR |
| 6 | DCOVA1647LM08 | | Camera Side Cover Service (AH150UC) | |
| 6-2 | NSFTZ0049TAFW | | Battery Lid Axle | AC |
| 6-3 | MSPRD0050TAFJ | | Battery Lid Open/Close Spring | AC |
| 6-4 | TLABH0264TAZZ | | Recycling Label (AH150U/AH160U) | AB |
| 6-4 | TLABH0317TAZZ | | IC Label(AH150UC) | |
| 6-5 | GFTAB1066TAKA | | Battery Lid | AE |
| 6-7 | MSPRC0102TAFJ | | Battery Lock Lever Spring | AA |
| 6-8 | MLEVP0030TASA | | Battery Lid Open/Close Lever | AC |
| 6-9 | LHLDZ1532TAZZ | | Battery Lock Holder | AC |
| 6-10 | MLEVP0044TASA | | Battery Lock Lever | AC |
| 6-11 | MSPRC0101TAFJ | | Battery Push-out Spring | AD |
| 6-12 | LHLDZ1445TAZZ | | Lens Holder | AD |
| 6-13 | LANGK0398TA00 | | Battery Lid Angle Fitting | AH |
| 6-14 | UBNDT0122TAZZ | | Hand Strap | AH |
| 7 | DCOVA1650LM01 | | Tilt Service | AP |
| 7-2 | PSPAZ0190TAZZ | | Tilt Spacer | AE |
| 7-3 | GCOVA1537TAKA | | Tilt Frame V | AL |
| 7-4 | PSPAZ0189TAZZ | | Rotation Spacer | AD |
| 7-5 | LANGH0071TAFW | | Stopper Fitting | AD |
| 8 | LHLDZ1533TAZZ | | LCD Holder(AH150U/UC) | AH |
| 8 | LHLDZ1544TAZZ | | LCD Holder(AH160U) | AF |
| 9 | PSHEP0044TA01 | | Prism Sheet(AH150U/UC) | |
| 9 | PSHEP0093TA01 | | Prism Sheet(AH160U) | |
| 10 | PSHEP0045TAZZ | | Diffusion Sheet (AH150U/UC) | AD |
| 10 | PSHEP0090TAZZ | | Diffusion Sheet(AH160U) | AD |
| 11 | PGiDM0037TAZZ | | Light Guide Plate (AH150U/UC) | AG |
| 11 | PGiDM0030TAZZ | | Light Guide Plate(AH160U) | AH |
| 12 | PMiR-0021TAZZ | | Reflection Sheet (AH150U/UC) | AC |
| 12 | PMiR-0032TAZZ | | Reflection Sheet(AH160U) | AD |
| ⚠ 13 | CLMPV0048LM01 | | Lamp Inverter Unit (AH150U/UC) | |
| ⚠ 13 | CLMPV0049LM01 | | Lamp Inverter Unit (AH160U) | BA |
| 14 | CPNLC0047LM02 | | LCD Panel(AH150U/UC) | BZ |
| 14 | CPNLC0048LM02 | | LCD Panel(AH160U) | CD |
| 15 | PZETV0343TAZZ | | LCD Lead Sheet (AH150U/UC) | AA |
| 15 | PZETV0370TAZZ | | LCD Lead Sheet(AH160U) | AB |
| 17 | TLABM2181TAZZ | | Model Label(AH150U) | AC |
| 17 | TLABM2182TAZZ | | Model Label(AH160U) | AC |
| 17 | TLABM2222TAZZ | | Model Label(AH150UC) | |
| 18 | CLNSA0127TA01 | | Lens Unit | BS |
| 19 | GFTAC1241TASA | | Cassette Compartment Cover | AD |
| 20 | DUNTK2949QA04 | | VCR Unit(AH150U/UC) | — |
| 20 | DUNTK2949QA02 | | VCR Unit(AH160U) | — |
| 21 | DUNTK2934QA00 | | CAMERA Unit | — |
| 22 | QPWBH2937TAZZ | | Tilt FPC | AQ |
| 23 | LHLDW1038TA00 | | FPC Holder | AC |
| 24 | RUNTK0404TAZZ | | VCR Operation Unit | AT |
| 25 | QTANZ0146TAZZ | | Battery Terminal Unit | AK |
| 26 | QSW-Z0285TAZZ | | Power/Zoom Unit | AR |
| 27 | LHLDZ1452TAZZ | | Power Lock Holder | AC |
| 28 | MSPRC0083TAFJ | | Power Lock Spring | AA |
| 29 | JBTN-0277TASA | | Power Button | AD |
| 30 | LHLDZ1451TAZZ | | Power Holder | AC |
| 31 | JKNBP0152TASA | | Power Knob | AD |
| 32 | JKNBP0153TASA | | Zoom Knob | AD |
| 33 | LHLDZ1453TASA | | Zoom Knob Holder | AD |
| 34 | JKNBP0154TASA | | Open Knob | AC |
| 35 | PSPAZ0191TAZZ | | Microphone Spacer | AA |
| 36 | RMiCC0090TAZZ | | Microphone | AN |
| 37 | MSPRT0034TAFJ | | Lid Lock Spring | AC |
| 38 | LHLDZ1454TA00 | | Lid Lock | AD |
| 39 | NSFTZ0084TAFW | | VCR Lid Shaft | AD |
| 40 | PSPAZ0318TAZZ | | Microphone Ware Spacer | AD |
| 41 | LHLDZ1450TAZZ | | Speaker Holder | AC |
| 42 | VSP0020P-A7WN | | Speaker | AM |
| 43 | PSPAG0103TAZZ | | Speaker Spacer | AC |
| 46 | DCOVA3056LM01 | | Speaker Cover | AE |
| 47 | PSPAH0031TAZZ | | Wire Holder | AB |
| 48 | QSW-Z0342TAZZ | | Turn/Eject SW | AH |
| 49 | MLEVP0031TAZZ | | Eject Lever | AC |
| 50 | LANGK0399TAZZ | | Tripod Angle | AH |
| 51 | PSHEP0160TAZZ | | Microphone Lead Sheet | AC |
| 52 | RUNTK0354TAZZ | | Lithium Unit | AF |
| 54 | GCOVA1651TAKA | | Microphone Cover | AG |
| 55 | QPWBH2815TAZZ | | CCD FPC | AE |
| 56 | CCOVA1652LM01 | | AV Unit Cover Service | AD |
| 56-2 | HiNDP0214TASA | | Video indication Panel | AC |
| 57 | GCOVA1649TASA | | Adjust Hole Cover | AC |
| 58 | RUNTK0352TAZZ | | AV Jack Unit | AS |
| 59 | RUNTK0356TAZZ | | 6-cell Detection Unit | AG |
| 60 | PSHEP0159TAZZ | | Wire Fix Sheet | AB |
| 62 | PSPAZ0331TAZZ | | Microphone Spacer | AB |

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| 63 | TLABH0441TAZZ | | Battery Label | AC |
| a | LX-HZ0018TAFN | | M2x6 Tapping, Silver | AA |
| b | LX-HZ0018TAFF | | M2x6 Tapping, Black | AA |
| c | LX-HZ0045TAFN | | M2x4 Tapping, Silver | AA |
| d | XiPSF20P04000 | | M2x4 Small Screw, Black Zinc Plating | AA |
| e | LX-BZ0191TAFD | | M2 Special Screw | AC |
| f | XiPSD20P03000 | | M2x3 Screw | AA |
| g | LX-UZ0016TAFD | | M2x5 Special Screw | AA |
| h | LX-BZ0200TAFD | | M2x7 Special Screw | AB |
| i | XiPSN20P04000 | | M2x4 Small Screw, Silver | AA |
| k | LX-HZ0063TAFC | | M1.7x6 Tapping, Silver | AA |

## CASSETTE HOUSING PARTS

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| 400 | CHLDX3077GE01 | | Cassette Compartment Ass'y | AY |
| 401 | MSPRT0414GEZZ | | Up Main Spring | AD |

## CAMERA UNIT PARTS

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| 1 | PCOVM8016TA00 | | Dustproof Rubber | AC |
| 2 | LANGK0324TAFW | | CCD Retaining Plate | AG |
| 3 | PFiLW0060TAZZ | | Optical Filter | AS |
| 4 | VHiLZ2413H5-1 | | CCD Sensor | BE |
| 5 | DUNTK2800PM03 | | CCD Unit | — |
| 6 | LX-HZ0013TAFF | | Screw (1.7 X 6) | AA |

## SUPPLIED ACCESSORIES

### ACCESSORIES

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| | GCOVH1225TASA | | Lens Cap | AG |
| | QCNW-1295TAZZ | | A/V Cable | AK |
| | or | | | |
| | QCNW-1448TAZZ | | A/V Cable | AH |
| | RRMCG0084TASA | | Infrared Remote Control | AN |
| | TiNSE0396TAZZ | | Operation Manual (AH150U/AH160U) | AG |
| | TiNSL0291TAZZ | | Operation Manual (AH150UC) | |
| | TLSTS0022TAZZ | | Help Sheet(AH150UC) | |
| | TCAUH0262TAZZ | | Ferrite Core Install Manual (AH150U/UC) | AC |
| ⚠ | UADP-0312TAZZ | | AC Adapter | BB |
| | UBNDS0010TASA | | Shoulder Strap | AH |
| | UBATL0011TAZZ | | Lithium Battery | AE |
| | UBATM0010TA01 | | Battery(AH150U/AH160U) | BC |
| | UBUTM0011TA01 | | Battery(AH150UC) | |
| | UBATU0247AJZZ | | AA Size Battery(x2) | AE |
| | RCORF0038TAZZ | | Ferrite Core Large | AK |
| | RCORF0083CEZZ | | Ferrite Core Small | AL |

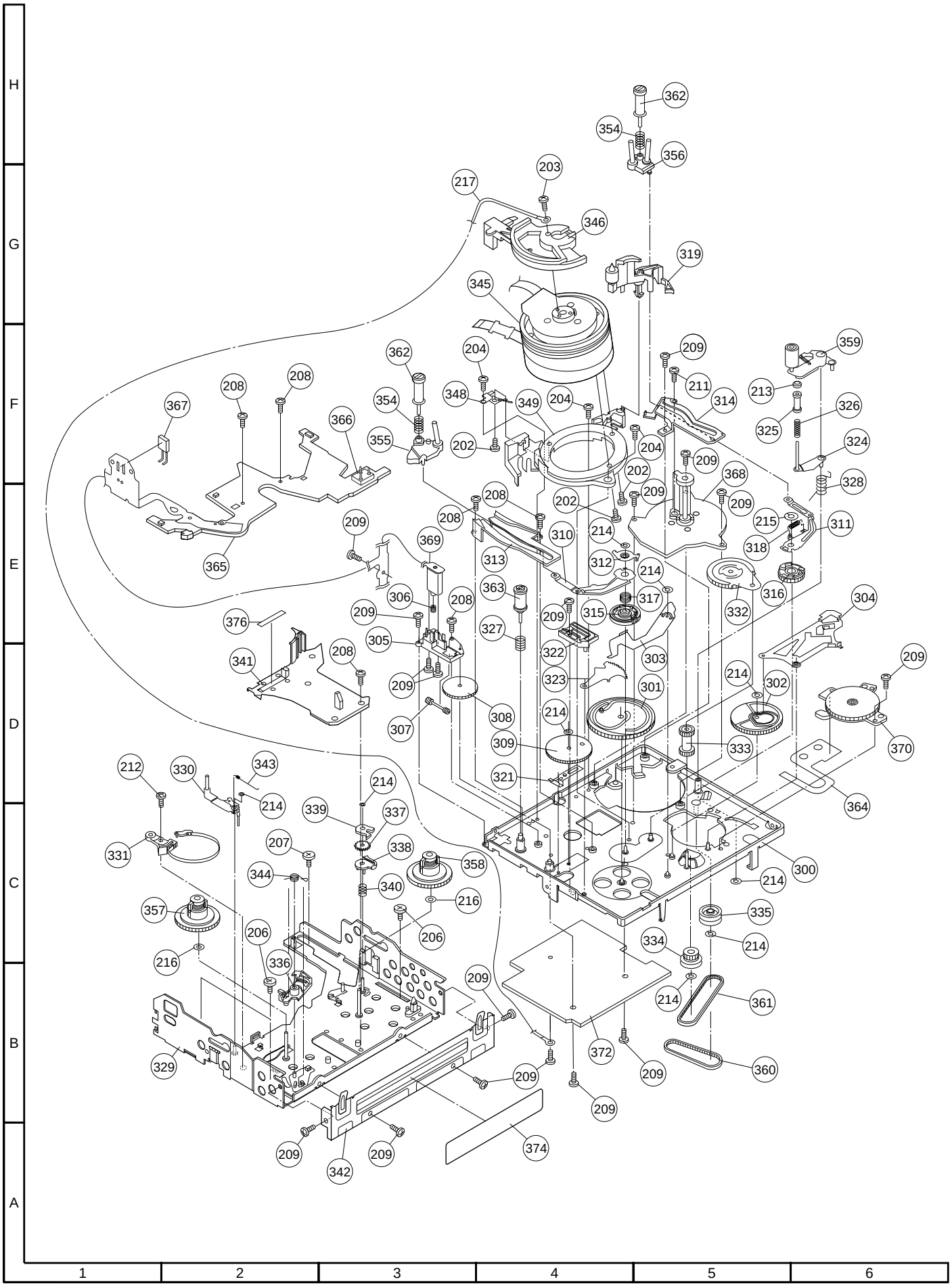
### ACCESSORIES
### *(NOT REPLACEMENT ITEM)*

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| | TGANE0071TAZZ | | Guarantee Card (AH150U/AH160U) | — |
| | TGANZ0024TAZZ | | Guarantee Card (AH150UC) | — |
| | TLABK0002PEZZ | | No. Card | — |

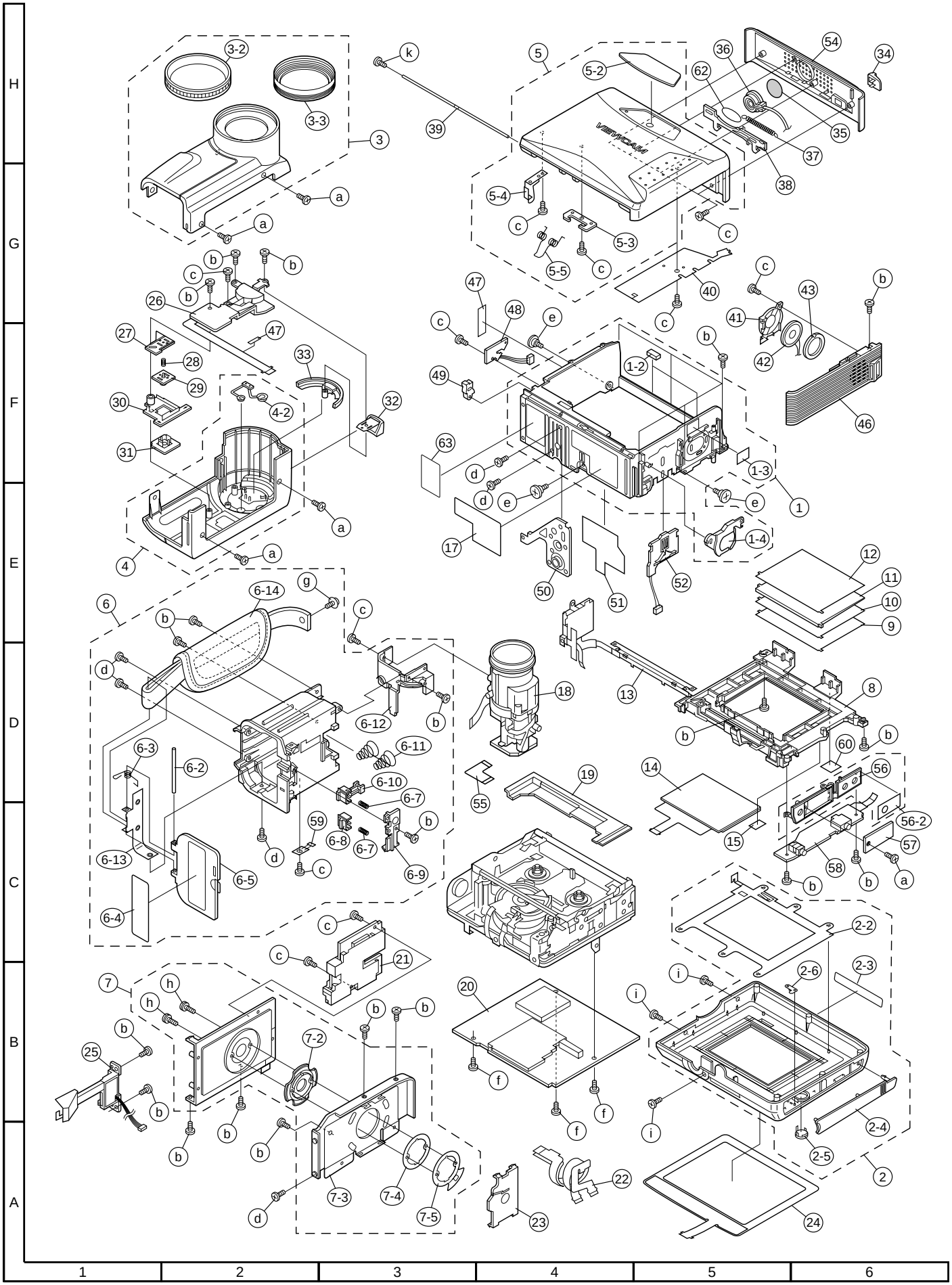
## PACKING PARTS
## *(NOT REPLACEMENT ITEM)*

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| | SPAKC7603TAZZ | | Packing Case(AH150U/UC) | — |
| | SPAKC7604TAZZ | | Packing Case(AH160U) | — |
| | SPAKP6123TAZZ | | Wrapping Paper | — |
| | SPAKP6129TAZZ | | HOSO-PP | — |
| | SSAKA0105TAZZ | | Polyethylene Bag | — |
| | SPAKA6343TAZZ | | Packing ADD. | — |
| | SPAKA6344TAZZ | | Packing ADD. | — |
| | SPAKA6345TAZZ | | Packing ADD. | — |
| | SPAKF0266TAZZ | | AC Adapter Packing | — |

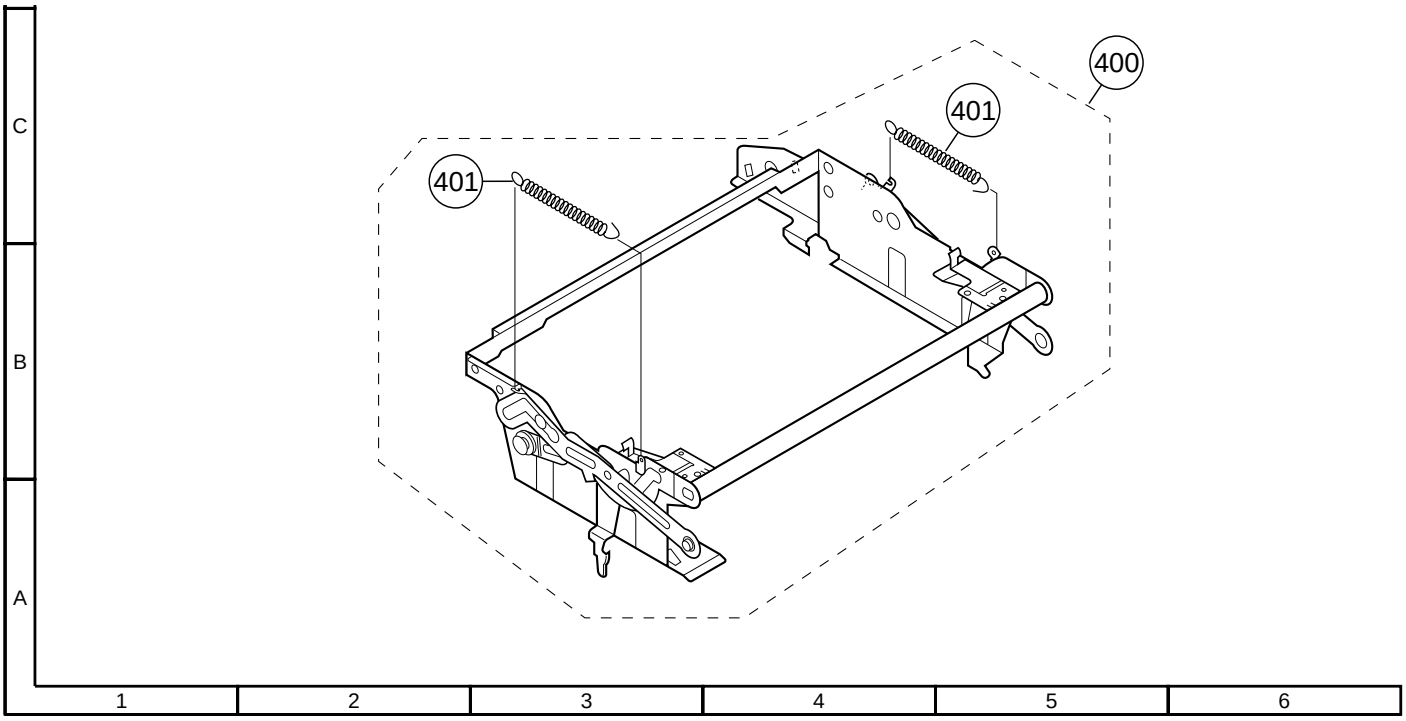
# MECHANISM CHASSIS EXPLODED VIEW



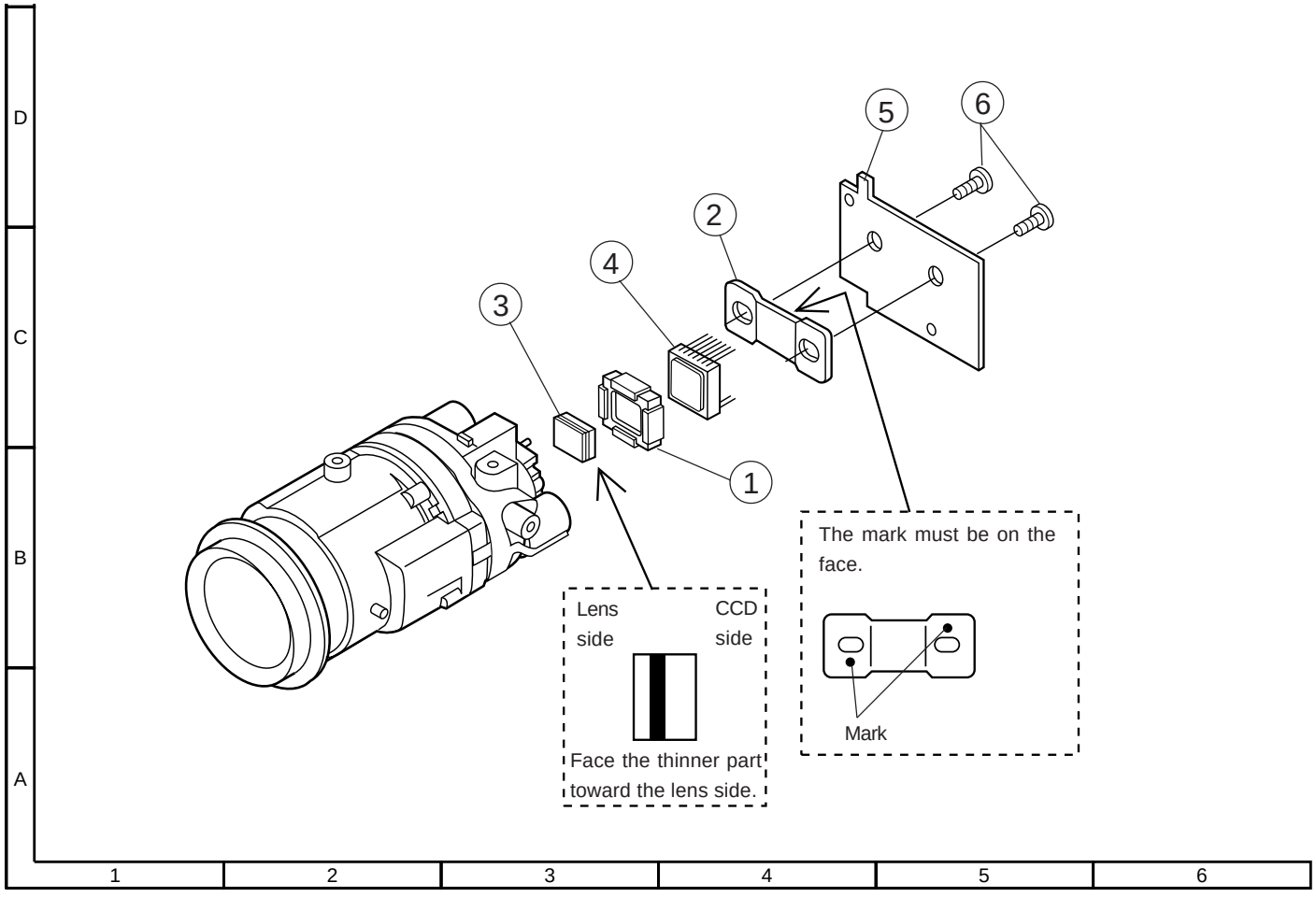
## CABINET EXPLODED VIEW



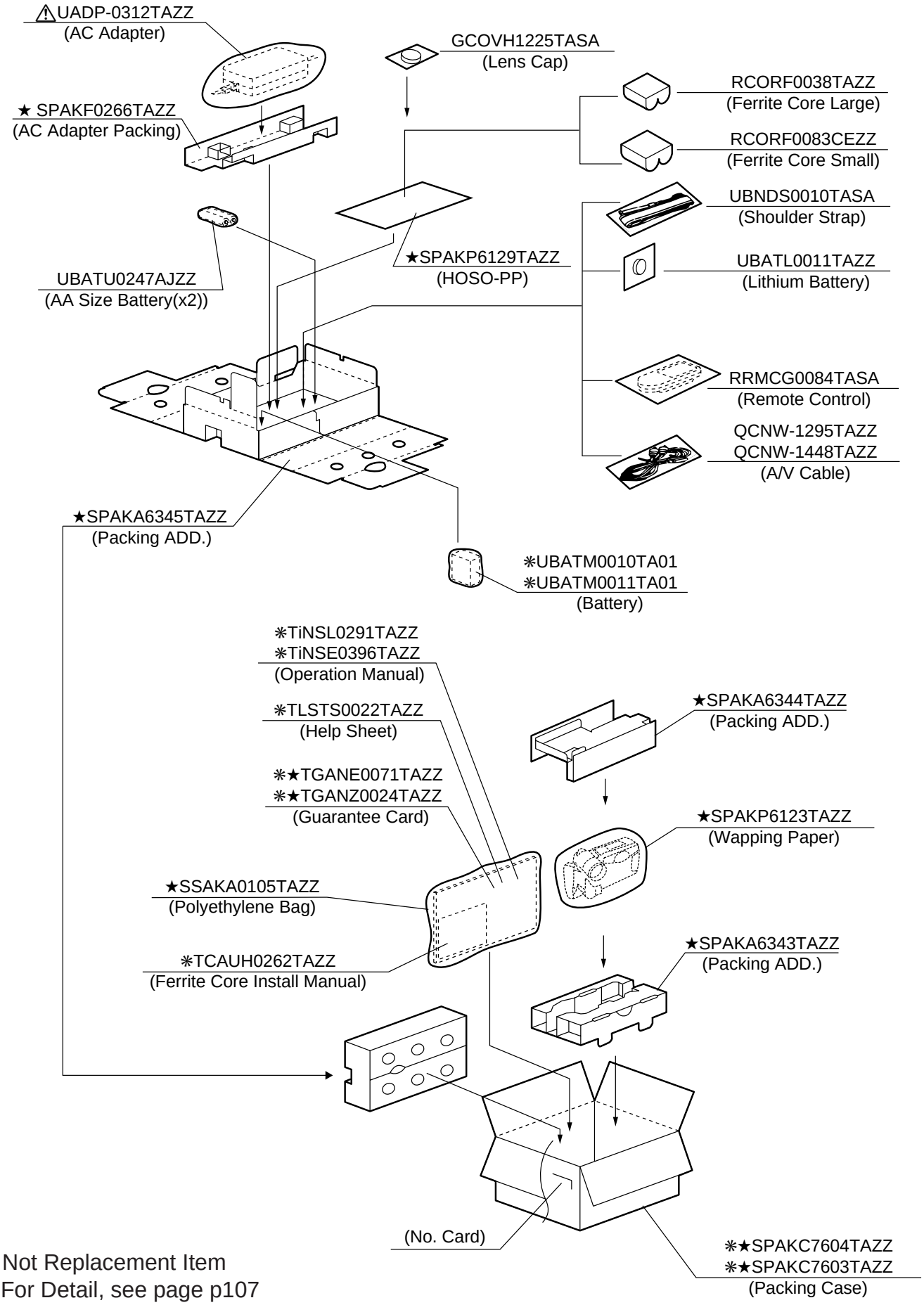
## CASSETTE HOUSING CONTROL UNIT EXPLODED VIEW




## CAMERA UNIT EXPLODED VIEW



# 11. PACKING OF THE SET




★ Not Replacement Item
⁕ For Detail, see page p107

SHARP

**COPYRIGHT Ⓒ 2001 BY SHARP CORPORATION**

ALL RIGHTS RESERVED.

No part of this publication may be reproduced,
stored in a retrieval system, or transmitted in
any form or by any means, electronic, mechanical,
photocopying, recording, or otherwise, without
prior written permission of the publisher.

ⓈJapan ⓅSREC TQ1058-S
Feb. 2001 Printed in JAPAN
SA. DS

SHARP CORPORATION
AV Systems Group
Quality & Reliability Control Center
Yaita, Tochigi 329-2193, Japan